STAGHOUND ARMORED CAR 1942–62

STEVEN J ZALOGA

ILLUSTRATED BY PETER BULL

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EDITOR'S NOTE

For ease of comparison between types, imperial measurements are used almost exclusively throughout this book. The following data will help in converting the imperial measurements to metric:

1 mile = 1.6km
1lb = 0.45kg
1yd = 0.9m
1ft = 0.3m
1in = 2.54cm/25.4mm
1gal = 4.5 liters
1 ton (US) = 0.9 tonnes

AUTHOR'S NOTE

The author would especially like to thank Peter Brown for his help with British archival material and Lee Ness for his help on post-war Staghound export data. The photos used come from a variety of sources including NARA (US National Archives and Records Administration, College Park, MD); NAC (National Archives Canada, Ottawa); IWM (Imperial War Museum, London); MHI (US Army Military History Institute, Carlisle Barracks, PA); Patton Museum (Ft. Knox, KY); IGPO (Israeli Government Press Office, Tel Aviv).

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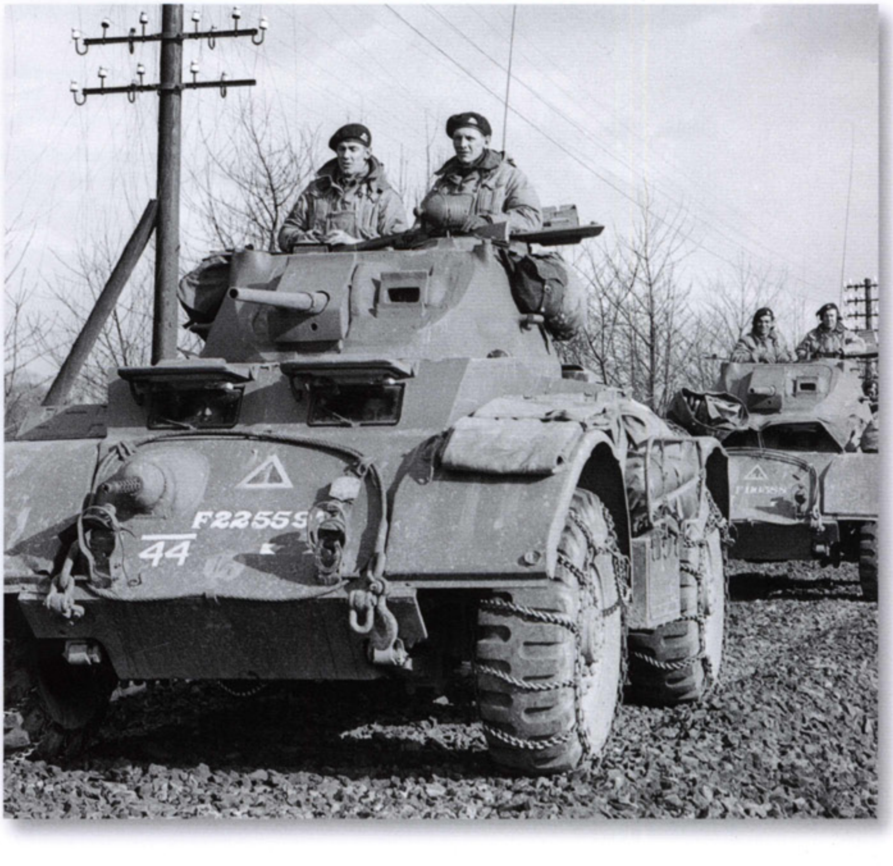
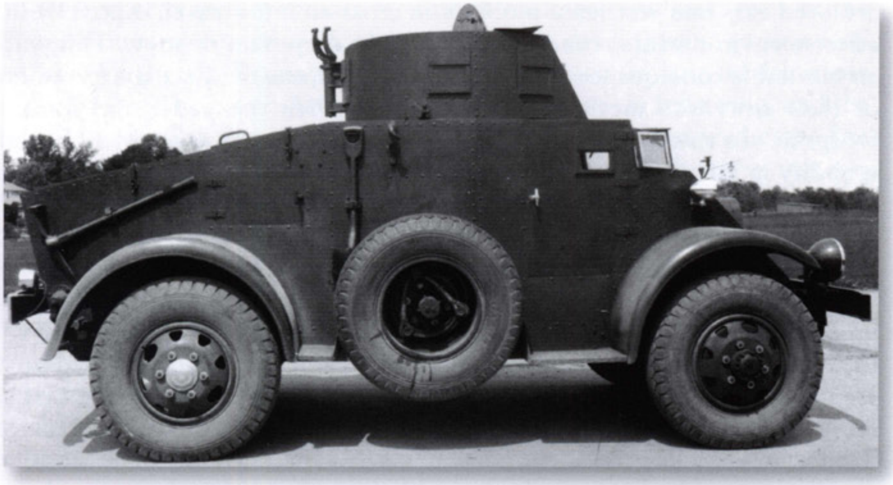
STAGHOUND ARMORED CAR 1942–62

INTRODUCTION

The Staghound medium armored car was a rarity among World War II US armored vehicles. It was one of the only American designs that was manufactured exclusively for other armies and never used by the US Army. The Chevrolet T17E1 was originally based on a joint US Armored Force and British requirement. By the time the T17E1 was ready for production, the US Army had ruthlessly restricted its armored car acquisition to a single type, the M8 light armored car. As a result, the Chevrolet M6 medium car never entered US service. However, British forces still saw a need for an armored car in this class and so encouraged serial production of the



A column of Staghounds from A Squadron, XII Manitoba Dragoons, moves along a railroad bed in the Hochwald area of Germany on March 2, 1945. Tire chains are in use for traction in mud and the Staghounds have the usual Canadian bins added to the side in place of the auxiliary fuel drums. (NAC Jack Smith PA 144144)



The last significant armored car developed by the US Army prior to World War II was the archaic T11 developed by the Four Wheel Drive Auto Company in 1934–36. Six of the original T11s and six of the T11E1s were manufactured in 1934–35. Only this single pilot of the final T11E2 was completed, which incorporated a new turret. No serial production was authorized due to weak suspension and poor engine cooling. (NARA)

design, which they called the Staghound. The entire production run except for a handful of pilot models was supplied to Britain.

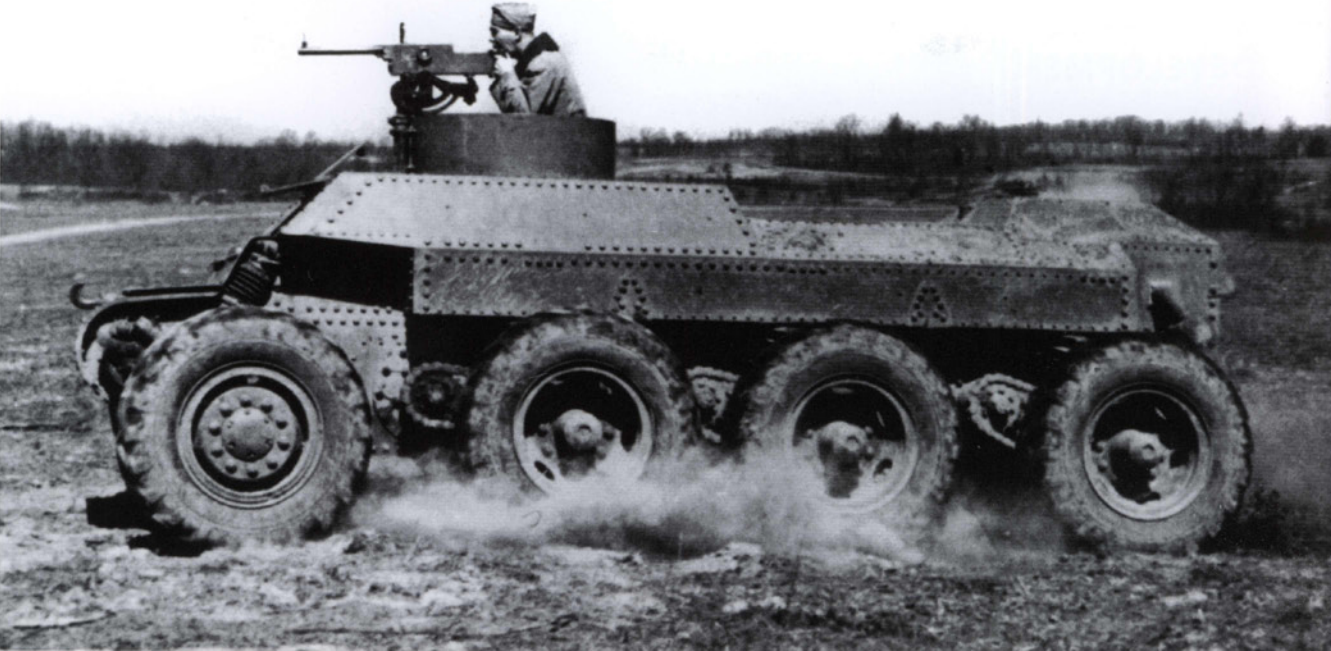
By the time the Staghound arrived in service in early 1944, battlefield conditions had changed. The vehicle was designed for long-range desert reconnaissance missions, but British and Commonwealth armored-car regiments were now knee-deep in the mud of the Italian winter. Although a dependable and robust vehicle, the Staghound was also large and cumbersome on Italy's poor mountain roads. The Staghound fared better once the Italian campaign turned mobile in the summer of 1944. The vehicle was also widely used in North-West Europe starting in the summer of 1944, seeing service primarily in the headquarters of armored-car regiments. Its most extensive use was by Canadian regiments. The Staghound was durable and dependable enough that it remained in service after World War II. Many were cascaded down to NATO allies such as the Netherlands, Italy and Denmark, while others were exported to the countries in the Middle East. They saw combat use in several Middle Eastern wars, and remained in Lebanese service well into the 1980s. The Staghound continued to pop up in unexpected places around the globe, including Cuba during the revolution of the 1950s, and in Nicaragua during the civil war of the 1980s.

DEVELOPMENT

Origins

At the time that the US Army formed the Armored Force in the summer of 1940 in response to the shocking defeat of France, one of the technical lessons from the campaign was the German use of wheeled armored cars for reconnaissance. At the time, the US Army was in the process of acquiring the M3A1 scout car for its mechanized cavalry force. The M3A1 was essentially a lightly armored truck with no overhead armored protection. There was some debate regarding the ideal reconnaissance vehicle, with options mooted including light armored cars, medium armored cars and light tanks. The pre-war cavalry had used both armored cars and light tanks, the latter called "combat cars". The advantages of armored cars over tanks were that the former were faster on roads and quieter, which was helpful when scouting. Armored cars also tended to be more reliable and require less maintenance than tracked vehicles. On the negative side, armored cars had restricted mobility in cross-country travel, especially in adverse environmental conditions such as in deep mud or snow. This was an inevitable consequence of having wheeled suspension, since the footprint of their tires was inevitably much heavier than the wider and longer footprint of a tracked vehicle. Light tanks were attractive due to their better mobility in all conditions and the fact that their chassis permitted the use of better armored protection and heavier firepower. On the other hand, tracked vehicles were noisy, consumed more fuel, and required more daily maintenance attention than armored cars. To some extent, the choice was linked to tactics. If the reconnaissance doctrine stressed the need to fight for intelligence, a more robust vehicle such as a light tank was better suited to the role. If the tactics placed more stress on stealth and speed, armored cars were a better choice. In 1940–41, the Armored Force had not made up its mind about tactics or technology – indeed, the debate has continued up to the present day. As a result, the US Army in 1941 was willing to sponsor the development of both armored cars and light tanks until such time as these tactical issues were settled.

Besides the Armored Force, two other combat arms had some interest in future armored reconnaissance vehicles. The Tank Destroyer Center had a standing requirement for a fast scout vehicle, since a central element of the new tank-destroyer tactics was to put out a screen of reconnaissance troops in front of the tank-destroyer companies to locate any approaching enemy force. There was some debate whether such troops should use a light unarmored vehicle such as a Jeep, or a light armored car. The rump of the cavalry force was also in the process of organizing mechanized cavalry squadrons which would serve both as organic divisional scout troops as well as corps- and army-level scout formations. Light tanks and armored cars were being examined as options for these formations as well. As a result of these related tactical requirements, the Ordnance Department began development work on three categories of armored car in 1941: light, medium, and heavy. These differed primarily in the amount of armor protection rather than the level of firepower, as all initially used the 37mm tank gun as their principal weapon.

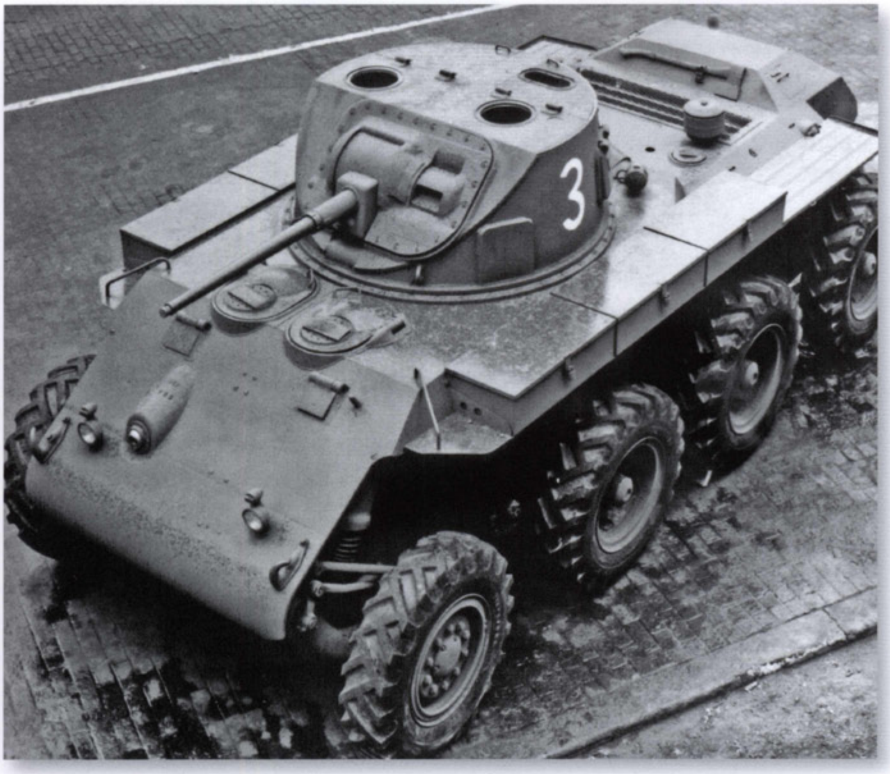


The Trackless Tank is seen here during its demonstration for the Armored Force Board on March 19,1941. The performance of this medium armored car was promising enough to initiate the development of medium armored cars for the US Army. (Patton Museum)

To further complicate matters, British military representatives in the United States were active in encouraging the development of armored vehicles by the US Ordnance Department that would suit British army requirements. The North African desert campaign was in full swing, and the British purchasing agents were especially interested in armored cars. The inventory of armored cars available to the British Eighth Army in early 1941 was motley and far from ideal. Many of these vehicles consisted of commercial automobile or light truck chassis with light armored bodies. They were not especially durable, their armament was not impressive, and they offered only minimal armored protection. While newer types were in the process of being delivered, there was still a desperate need for modern armored cars. The desert fighting put a premium on armored cars not only for traditional scouting missions, but also for a wide range of mechanized-cavalry missions including flank security and raiding. Under these demanding conditions, range and durability were major requirements.

Trackless Tank

The first effort in medium armored-car design was not initiated by the US Army, but was a private venture offered by industry. The Trackless Tank Corporation of New York had developed an elaborate wheeled armored vehicle with eight wheels, all with independent suspension and shock absorbers. This suspension arrangement offered significantly better cross-country performance than conventional truck-type arrangements that used conventional full-width axles and leaf-spring suspension. The Trackless Tank, as the company's name implied, was envisioned as a wheeled alternative to tracked light tanks such as the existing M2A4. However, the US Army showed little interest in this concept since wheeled vehicles invariably had poorer mobility in adverse soil conditions than



Reo Motor Company completed two T13 medium armored cars in May 1942, but the design was so troublesome that it was never considered a serious competitor to its Ford or Chevrolet T17 rivals.

full-tracked vehicles. Ordnance was also skeptical of the company, as it was new and small, so had no track record and limited resources. However, even though Ordnance rejected the project, the Armored Force was intrigued enough by the idea as a potential reconnaissance vehicle to ask for a demonstration at Aberdeen Proving Ground, Maryland, in March 1941. These initial trials were promising enough for the US Army to fund the manufacture of two pilot examples for further tests; this was soon followed by an Adjutant-General order for 17 more vehicles, now designated Medium Armored Car T13.

After the United States was dragged into World War II in December 1941, a furious effort was made to ramp up military production. In several cases, armored vehicles that were still in development and unproven were hastily ordered into production; among these was the Trackless Tank, now fitted with a Rock Island Arsenal turret and designated the T13E1. The Armored Force wanted approval of the production of 1,000 of these as reconnaissance vehicles for the new armored divisions. Later in the year more sober judgments were made, as it became clear that the Trackless Tank Corporation was in no position to manufacture a satisfactory pilot vehicle, never mind mass-produce the design. The army began to pressure the corporation into teaming up with an experienced automotive manufacturer, or simply selling the design patents to the government. Eventually, the large truck manufacturer, Reo Motor Company, was dragged into the program. The T13E1 effort proved a total disappointment due the technical immaturity of the design and Reo's inability to redeem the inherent flaws in the design. The vehicle's powertrain proved a repeated source of problems, and in June 1942 the Armored Force Board was forced to send back both pilots to the Trackless Tank Corporation for substantial redesign. In July 1942 development was suspended, and the program ended in acrimony and a Congressional investigation.

However, in the summer of 1941 British army representatives in the United States had raised the issue of medium and heavy armored-car designs suitable for reconnaissance work, based to some extent on field experience

A

1: STAGHOUND MK I, 1 TROOP, A SQUADRON, CAVALRY REGIMENT, 2ND NEW ZEALAND DIVISION, ITALY, SPRING 1944

Typical of most British and Commonwealth armor in Italy, this Staghound is finished in an overall camouflage pattern of Light Mud with rolling bands of SCC 14 Blue-Black. This Staghound is named "Pukeko", after the New Zealand bird. The squadron marking is a black triangle. The unit marking, usually carried on the left hull front or on the ammunition box on the left-hand fender, consists of the divisional insignia on top and the arm-of-service marking (white "77" over green/blue square) below.

2: STAGHOUND AA, HQ SQUADRON, POLISH CARPATHIAN LANCERS REGIMENT, ITALY, 1944

The Carpathian Lancers Regiment (*Pułk ułanów karpackich*) was the reconnaissance unit of the Polish 2nd Corps in Italy and one of the biggest users of the Staghound in that theater. As a result, the unit insignia seen on the left front of the hull consisted of the corps emblem, a white Warsaw mermaid on red square, over the cavalry arm-of-service insignia, a white 3517 on a green/blue rectangle. In this particular case the insignia has been painted as a shield instead of the usual square format. This particular vehicle is named after the town of Obertyn.

3: STAGHOUND MK II, POLISH CARPATHIAN LANCERS REGIMENT, ITALY 1944

British workshops in the Italian theater frequently modified the front fenders of Staghound armored cars by cutting out a rectangular portion and welding an ammunition box into the cavity so as to create more stowage. In the case of this Mk II of 2nd-Lt Półchłopek, the regimental insignia is painted on the left fender ammunition bin. This unit often painted the vehicle name on the glacis plate, but in this case no name is present.

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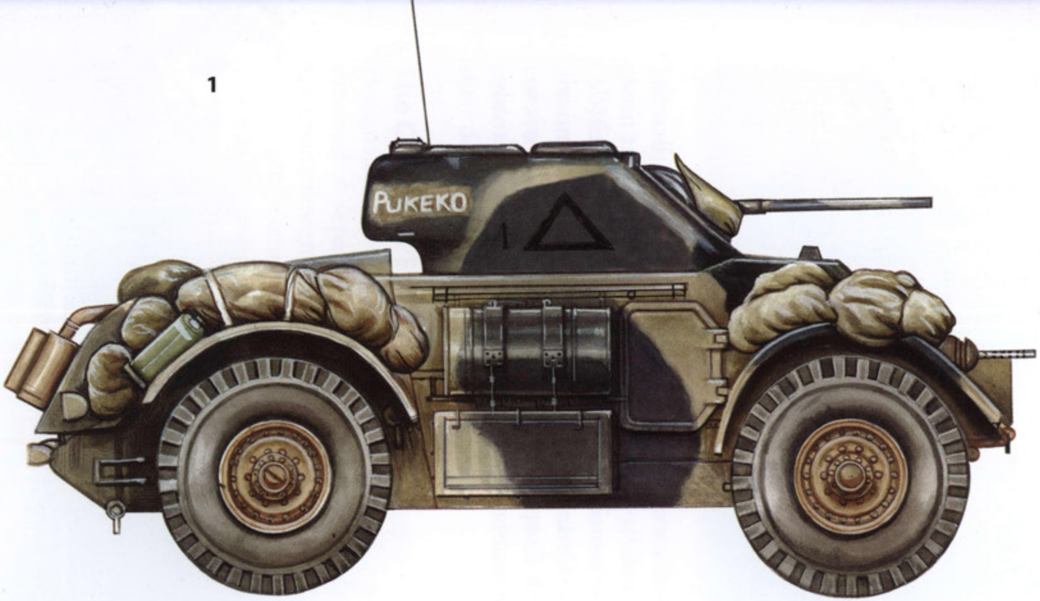

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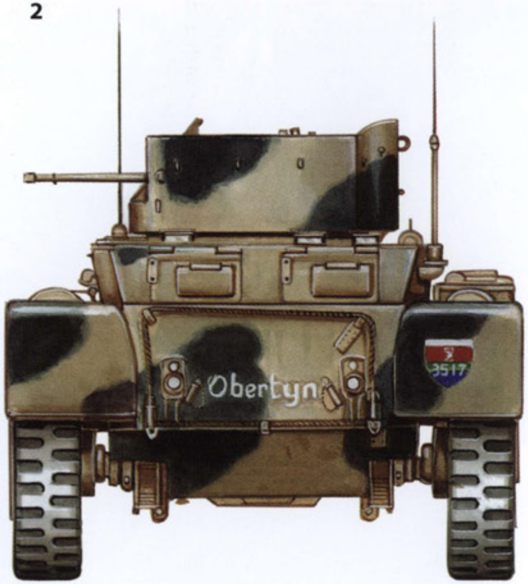
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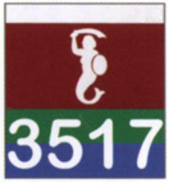

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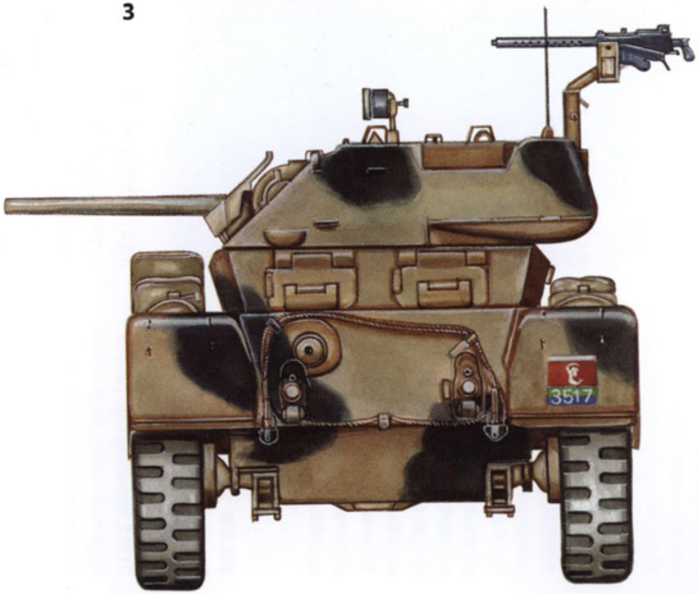
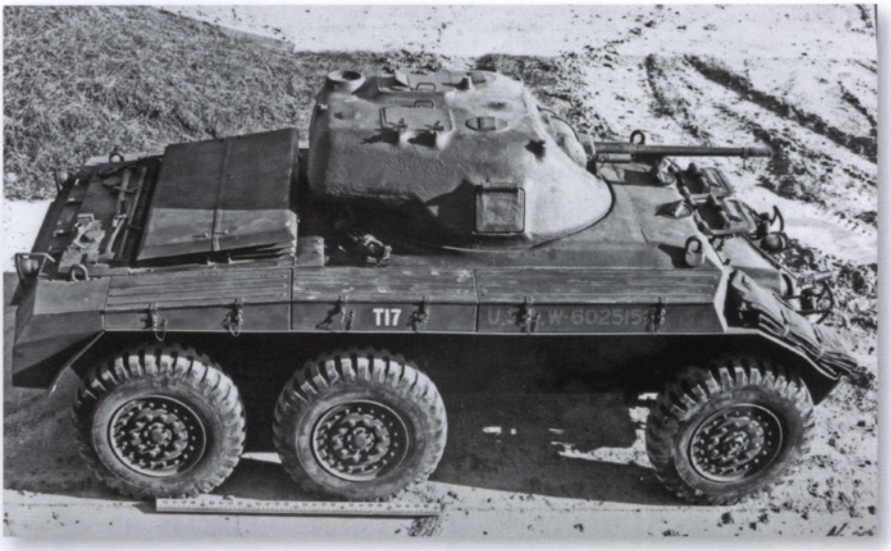
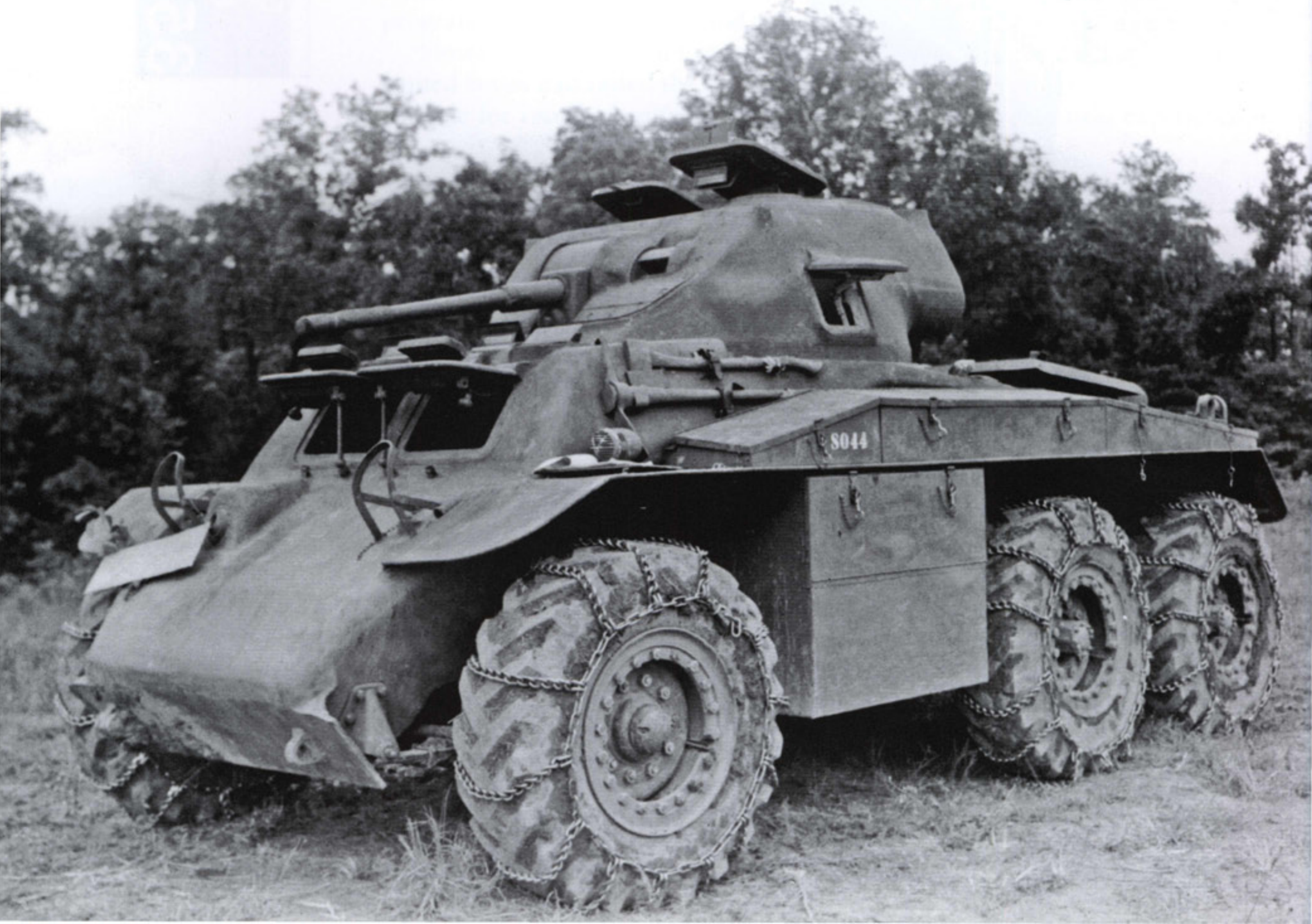


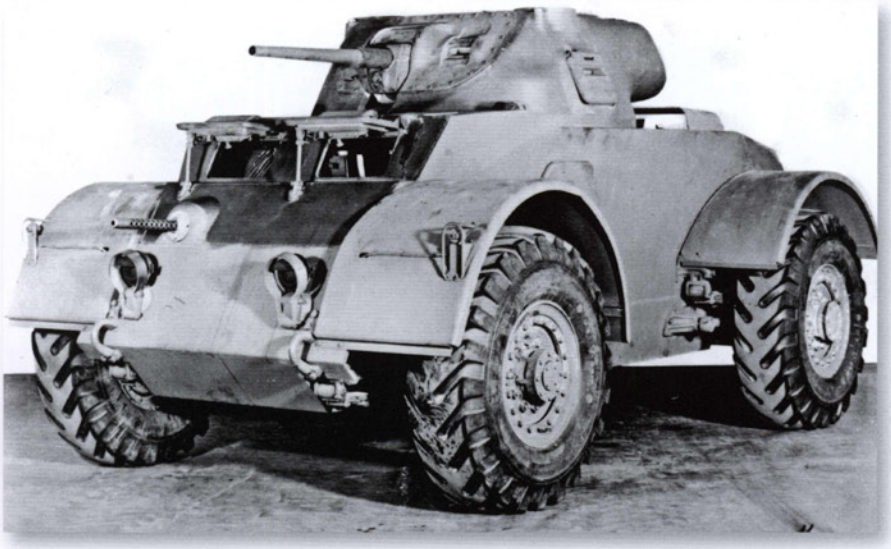


RIGHT The Ford T17 Deerhound was the competitor to the Chevrolet T17E1 Staghound for the medium armored car requirement. The types used a common Rock Island Arsenal turret, but were otherwise completely separate designs. The Ford design had more protracted automotive problems than the Chevrolet design, and the 250 that were built as the M5 medium armored car were used without armament in the United States by military police units. (NARA)

BELOW The Ford M5 Deerhound medium armored car had a number of structural differences from the Chevrolet T17E1, including the use of a large hull casting for the bow section instead of plate armor. Here, one of the production vehicles is seen during trials at the Armored Forces Board at Fort Knox. (Patton Museum)

against German heavy armored cars such as the SdKfz 232. The British army's staff dithered over the specific requirements sought, but at that time the US Armored Force was also considering the adoption of such a vehicle for the new armored divisions. Ordnance's suspicions about the technical limitations of the Trackless Tank Corporation encouraged senior officials to push for a parallel medium-armored-car program that could be competitively





This is one of the first two T17E1 pilots built by Chevrolet. At this stage, the design lacked the production stowage such as the stowage bin and auxiliary fuel tanks eventually fitted to the hull side. (NARA)

bid to industry. In July 1941, Ordnance solicited industry offers for the T17 medium armored car and the T18 heavy armored car.

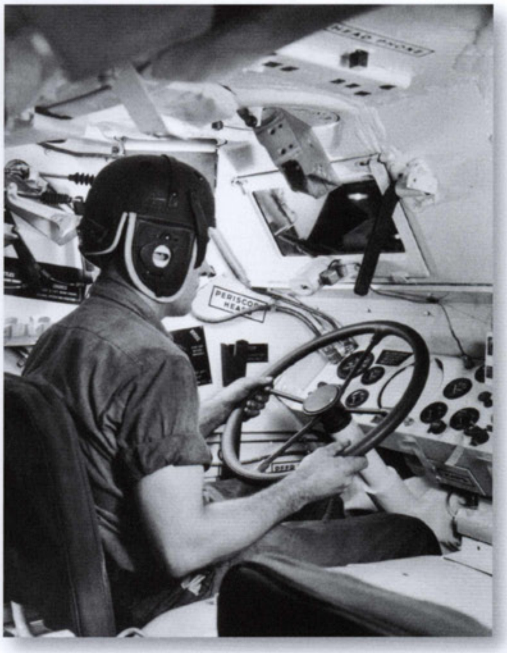
The March 1942 table of organization and equipment for the new US Army armored division envisioned the allotment of 49 armored reconnaissance cars to the divisional reconnaissance battalion, but a decision was yet to be made whether this would be a light, medium, or heavy armored car pending their development.

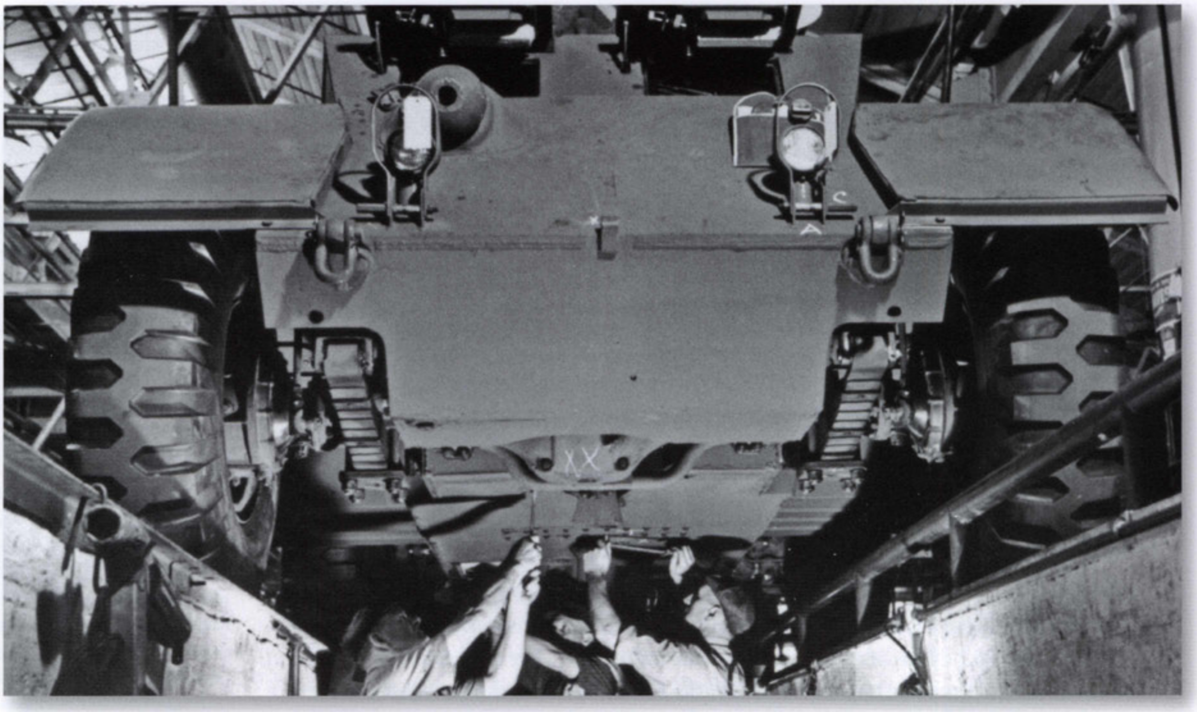
The Chevrolet T17E1

Designs for the T17 requirement were offered by two firms, so each design received a separate medium-armored-car designation. The Ford Motor Company design was designated the T17 while the design from the Chevrolet Division of General Motors Corporation received the T17E1 designation. Despite sharing a common designation, the only physical component the designs shared was the turret, developed by the Army's Rock Island Arsenal. The cast turret closely resembled other Ordnance turrets of the time, such as that developed for the M3 medium tank in 1940. However, British input into the requirement as well as changing US tactical doctrine led to several important changes in turret configuration. To begin with, the British insisted on having a minimum of two crewmen in the turret, side-by-side on either side of the gun. In addition, British practice was to situate the vehicle radio close to the commander, so a bustle was added at the turret rear to accommodate this equipment.

The two T17 designs offered similar levels of armor protection, less than an inch on the hull front and an inch on the turret face, to their unloaded weights were similar. The Ford T17 used a 6x6 configuration and was the heavier design at 28,600lb unloaded, while the Chevrolet T17E1 used a 4x4 configuration and weighed 27,200lb unloaded. The original Ford design was powered by two Ford 90hp engines, but to improve standardization the

The Chevrolet T17E1 was one of the most sophisticated armored cars of its day. The driver's tasks were eased by the pioneering use of automatic transmission and power-assisted steering, which made it an easy vehicle to drive even in demanding conditions. (MHI)





In contrast to most previous armored cars, which were built on conventional automobile chassis, the Chevrolet T17E1 used unibody construction with the armor hull serving as the chassis frame. The suspension was conventional, essentially based on reinforced truck axles and leaf springs rather than the independent spring suspension promoted by the Trackless Tank and the later Chevrolet T19 design. (MHI)

Army requested substitution of the Hercules JXD 110hp engine. The latter was already in use in the M3A1 scout car and in 2½-ton trucks, so was preferred over the commercial Ford engines.

While Ford was working on the T17, Chevrolet began work on its T17E1. The T17E1 program was headed by Earl S. MacPherson, a British-born engineer working for Chevrolet who later became famous for the MacPherson strut so widely used in post-war automotive designs. The T17E1 was powered by two General Motors 97hp truck engines. British liaison officers were able to influence MacPherson regarding the features they sought in the design and in the end, the T17E1 began to emerge along lines more in tune with British requirements in the desert campaign. Brig G. MacLeod Ross, a British liaison officer in the United States, later recalled in his memoirs: "We had managed to influence MacPherson sufficiently to obtain all the features we had built into the ill-fated [British army] armoured car in 1935".

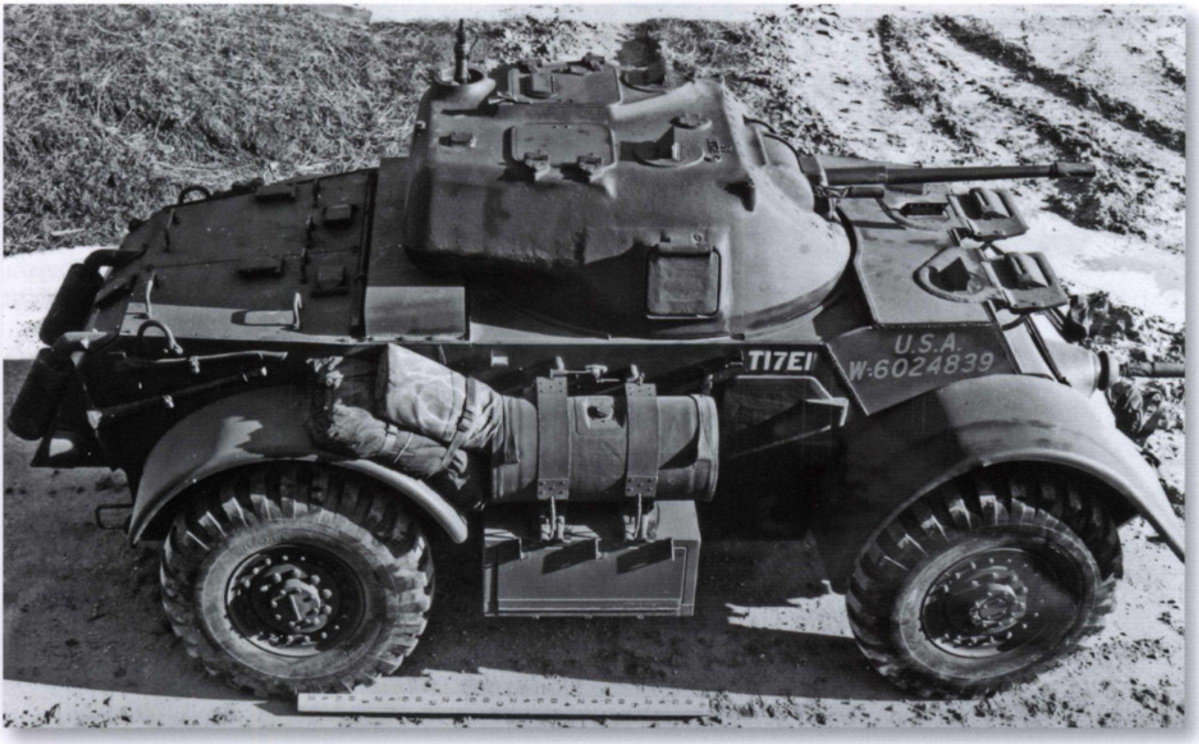
These medium-armored-car programs became caught up in the same production frenzy as the T13E1 program. In January 1942, Ford was authorized to manufacture 2,260 T17 armored cars even before the first pilot had been completed. This production was assigned to the St Paul plant, and in June 1942 a contract option was exercised, increasing production by 1,500 vehicles to 3,760 armored cars. The first pilot was manufactured in March 1942. Likewise, the army authorized the production of 2,000 Chevrolet T17E1s in January 1942. The British Purchasing Commission, especially pleased with the Chevrolet T17E1 design, formally requested the manufacture of 300 T17E1s in December 1941 and this order was formally confirmed in March 1942 after the first pilot was completed.

The design program for the Chevrolet T17E1 proceeded faster than that for the Ford T17, and an initial pilot was delivered to Aberdeen Proving Ground in March 1942, followed by a second pilot to the General Motors automotive test track. The initial series of tests encountered numerous flaws, but all seemed correctable. The design was quite sophisticated, including automatic transmission and a stabilized gun in a power-operated turret. The results were satisfactory enough that a further 1,500 T17E1 armored cars were added to the Chevrolet production contract in April 1942. The main issues uncovered by the tests were associated with the gearbox, differential, and universal joints, and arose due to Chevrolet's decision not to use available commercial components but to develop new and more robust parts. In the short term, until the components matured, this caused problems, but in the long term it considerably boosted the design's durability. While these powertrain issues were being settled, a wooden mock-up was constructed with stowage features heavily influenced by British desert-warfare requirements. Long range was an especially useful feature in operations in the desert, so the design incorporated a pair of auxiliary fuel-tanks on special racks on the hull side that could be dropped before entering combat to avoid any fire hazard.

The Armored Force became concerned about the performance of these medium armored cars in cross-country travel, as their conventional truck axles offered poor ride. As a result, yet another medium armored car effort, the T19, was authorized on January 29, 1942. This was another Chevrolet design, but unlike the T17E1 and like the T13 Trackless Tank it used six independently sprung wheels. In its original form it bore a strong resemblance to the T17E1, except for its 6x6 configuration.

By the summer of 1942, the US Army had a growing number of armored-car programs under way, including not only the T17 medium armored car effort, but a Ford and Studebaker light armored car, a Yellow Truck and General Motors heavy armored car, and a host of other experimental designs. The frenetic demand for equipment at the beginning of 1942 had led to a confusing excess of development efforts by the Armored Force, the Cavalry, and Tank Destroyer Command. The headquarters of Army Ground Forces was

This T17E1 on trials at Aberdeen Proving Ground shows the initial production turret which had pistol ports on either side, and lacked the eventual 2in smoke mortar on the forward right corner of the turret roof. (NARA)

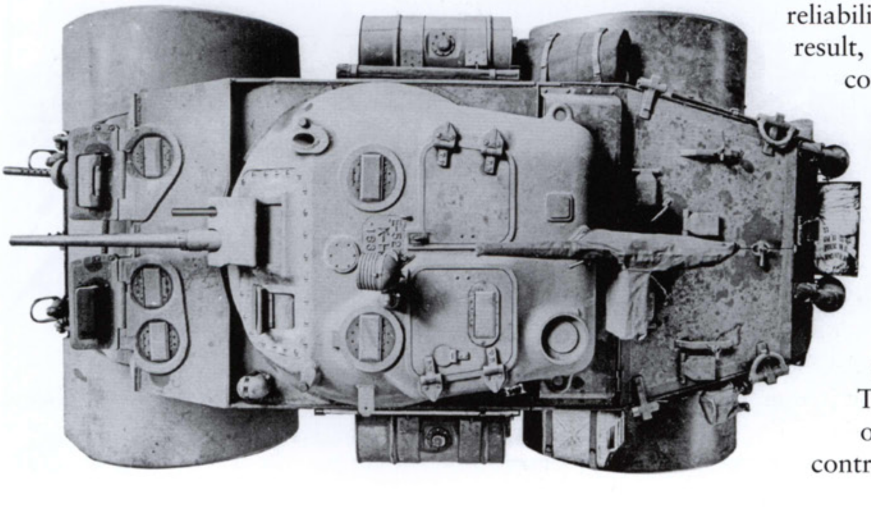


insistent that some standardization be imposed, so in the early autumn a Special Armored Vehicle Board – better known as the Palmer Board – was formed, under BrigGen W. B. Palmer of the Armored Force. The board's officers first met on October 14, 1942, and proceeded to Aberdeen Proving Ground to examine the numerous types of armored cars under development.

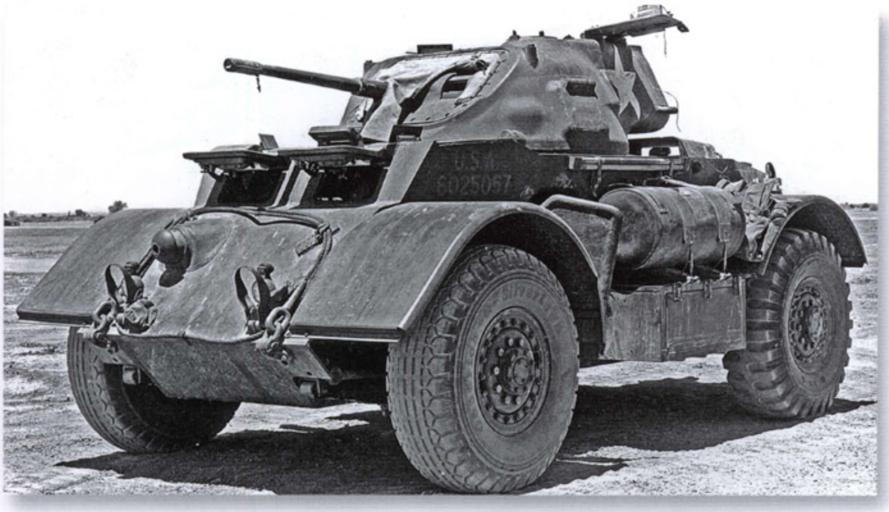
The board had no sympathy at all for the wide variety of types under development, and had a strong bias in favor of a small, cheap, light vehicle, on the presumption that the tactical requirement was for reconnaissance and not close combat. The Palmer Board was from the outset opposed to any armored car heavier than 20,000lb, which immediately ruled out the medium and heavy armored cars. Consequently, when the board released its findings in December 1942 it recommended that all the programs be terminated in favor of the Ford T22 37mm gun motor carriage, a vehicle originally designed as a light tank destroyer. This eventually emerged as the M8 light armored car (see Osprey New Vanguard 53: *M8 Greyhound Light Armored Car*). Although there was general acquiescence within the army over this decision, the Armored Force continued to press for a larger and more capable armored car, with the Chevrolet T19 medium armored car being favored. However, the Armored Force was overruled, and the M8 light armored car was standardized. However, the 1943 mechanized cavalry squadrons used a mixed organization based on M8 light armored cars and M5A1 light tanks, not exclusively armored cars as in British practice.

Regardless of the Palmer Board's belated recommendations, the industrial process started in early 1942 had built up considerable momentum. The Chevrolet T17E1 program had proceeded much more smoothly than the Ford T17 one, even though there were some unexpected delays in preparing the production plant for serial manufacture in the autumn of 1942 due to the shortage of machine tools. T17E1 manufacture started at a slow pace in October 1942 and only 157 examples were finished by the end of the year. Meanwhile, Ford T17 production was further delayed by lingering problems with the powertrain and only 32 examples were completed in 1942.

The British army did not share the US Army's fixation on standardization and continued to show interest in the medium armored cars. The US Army Desert Warfare Board was asked to conduct automotive trials on both the T17 and T17E1 medium armored cars, and these were completed in February 1943. The Chevrolet T17E1 emerged as the clear winner, with substantially better automotive reliability than the Ford T17. As a result, the British army requested continued manufacture of the type for its procurement through the Lend-Lease program. The average unit cost of the T17E1 was $31,433; by way of comparison, the M8 light armored car cost $22,587. Although Britain's selection of the Chevrolet T17E1 led to a termination of Ford's T17 production contract, the US Army authorized



The late-production batch of T17E1s introduced a new turret casting that omitted the two pistol ports on either side and added a 2in smoke mortar on the right front corner of the turret, at the request of the British army. (NARA)



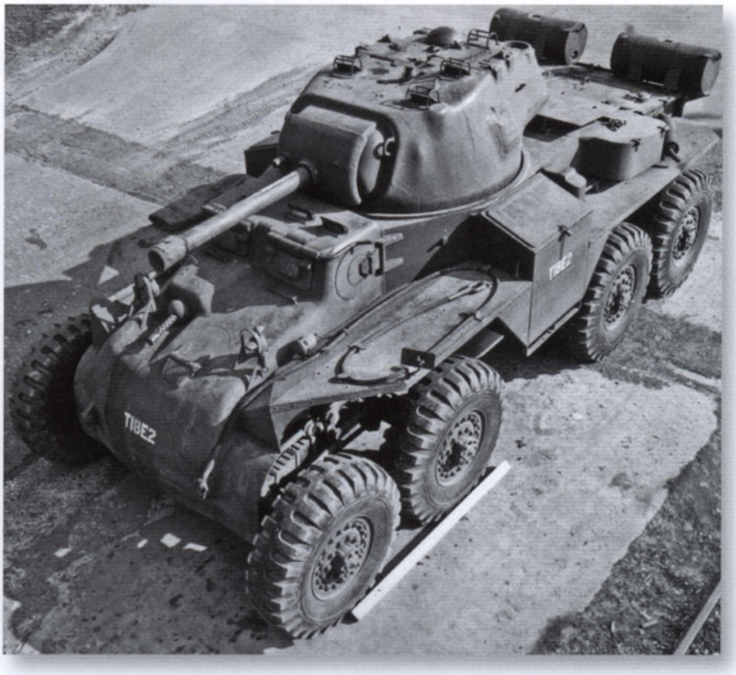
Seven T17E1 medium armored cars were retained in the United States for trial purposes and were the only examples to be finished in US Army markings, as in this vehicle, used by the Desert Warfare Board at Camp Young in 1943.

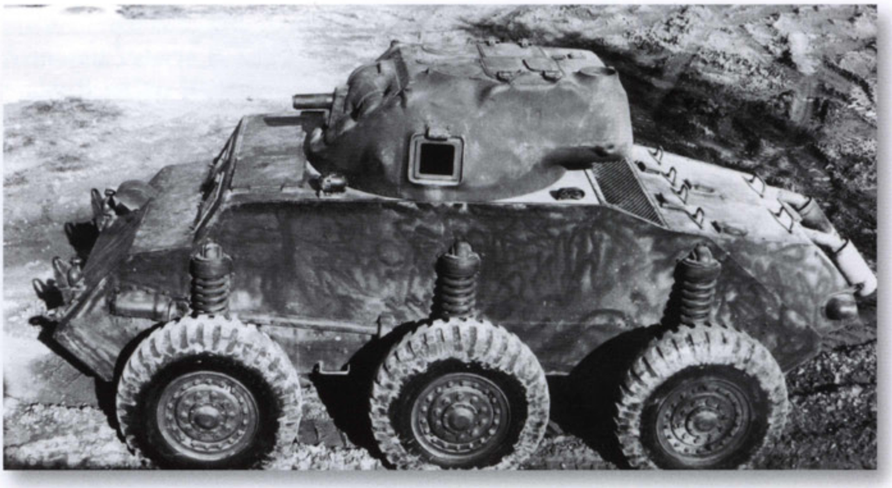
Ford to complete 250 vehicles to serve as a stopgap until plants were ready to manufacture the preferred M8 light armored car. These T17 armored cars were initially allotted to International Aid, with the intention to ship them to Britain; there, they were nicknamed the "Deerhound". However, after the Desert Warfare Board tests, the British army lost interest in the Ford armored car. As a result, the US Army was stuck with the 250 vehicles that were completed by the end of May 1943. They were not fitted with their intended 37mm main-gun armament and the US Army assigned them to military police units in the continental United States for patrol duty. The type was sometimes referred to as the M5 medium armored car even though this type was not formally standardized. Likewise, the T17E1 was sometimes referred to by its intended US designation of M6 medium armored car, and this designation can be found on production plates and contract documents.

The T18 heavy armored car also reached serial production, starting in December 1942, but only two were manufactured that year. The Palmer Board decision meant the contract was terminated, with a total of 30 having been completed by May 1943. In contrast to the Ford T17, Britain proved willing to accept the T18 under the Lend-Lease program, with the type being designated "Boarhound". However, these T18s were used only for trials and were never put into troop service. They were substantially more expensive than the T17E1, costing $60,820 each.

The United States began to ship Staghound armored cars to Britain in 1943, with a total of 2,620 delivered in 1943 and the final batch of 216 in 1944. In keeping with the "-hound" tradition for naming US-supplied

The heavy counterpart of the T17 medium armored car was the General Motors T18E2 Boarhound heavy armored car. It was substantially larger and more thickly armored than the medium armored cars and armed with a 57mm (6-pdr) gun. All of the 30 built were supplied to Britain, but none saw combat use. (NARA)

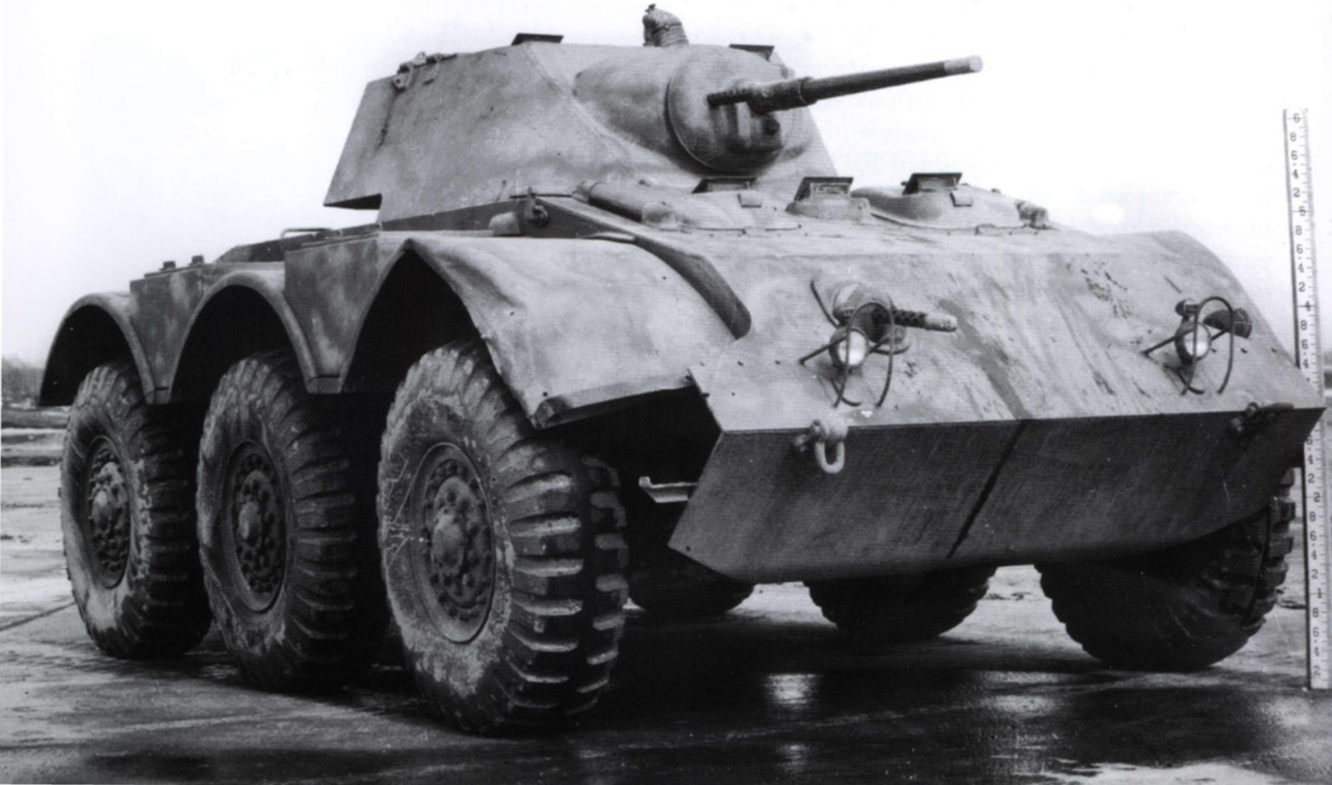




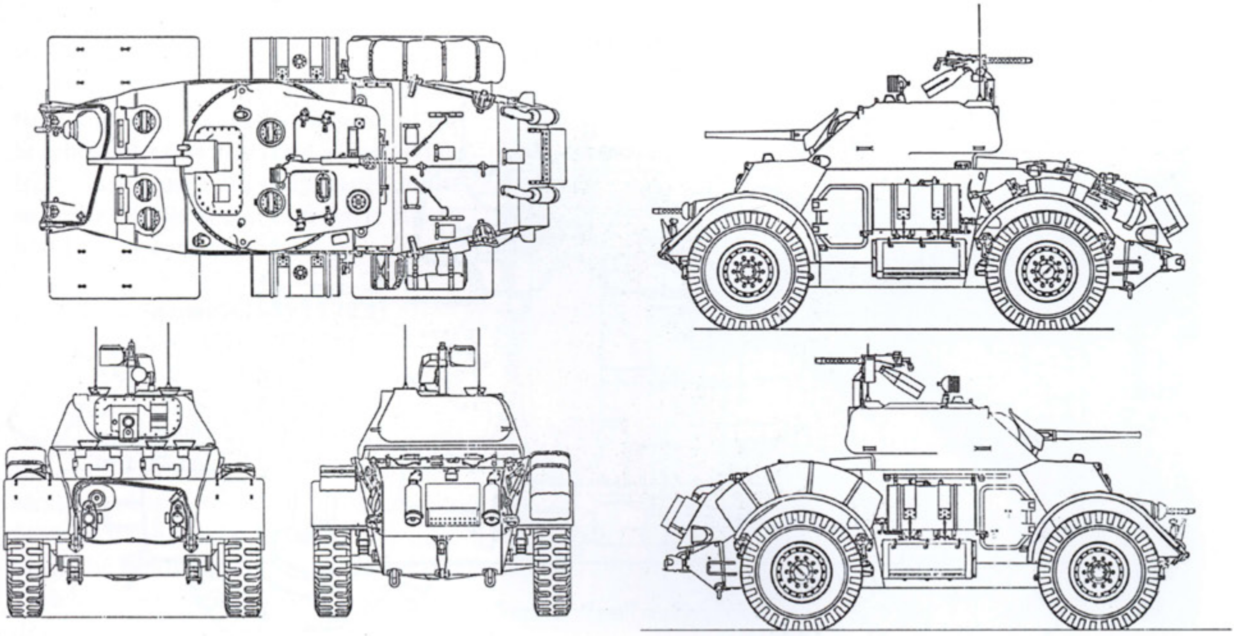
The Armored Force was interested in a further evolution of the Chevrolet T17E1, but with independently sprung suspension instead of conventional truck axles with leaf springs. The original T19 pilot, seen here, is strikingly similar to the T17E1. (NARA)

armored cars, the T17E1 was called the "Staghound". By June 1943, a total of 398 Staghounds were in British hands, with 204 in the UK, 120 in the Middle East outside Iraq, 38 in Iraq, 24 in North Africa, 11 in Australia and one in Canada.

A number of production changes occurred during the course of Staghound manufacture. The most noticeable change was in the turret design. The initial production configuration used the E5221 turret casting which had small pistol ports on either side of the turret front. However, this compromised the turret's protective quality without offering much advantage, so the ports were deleted on the improved E5229 turret casting. This turret variant also incorporated a 2in smoke mortar sought by the Royal Armoured Corps (RAC). Other small improvements included a D78272 .30cal machine-gun pintle on the turret and a stowage bin on the hull rear between the mufflers. As Staghounds began to arrive in Britain, the Director of the RAC set up



The refined pilot of the Chevrolet T19 was the Armored Force's preferred selection for its new reconnaissance vehicle, but the British selection of the less elaborate T17E1 and the Palmer Board's preference for the lighter M8 armored car doomed the program.



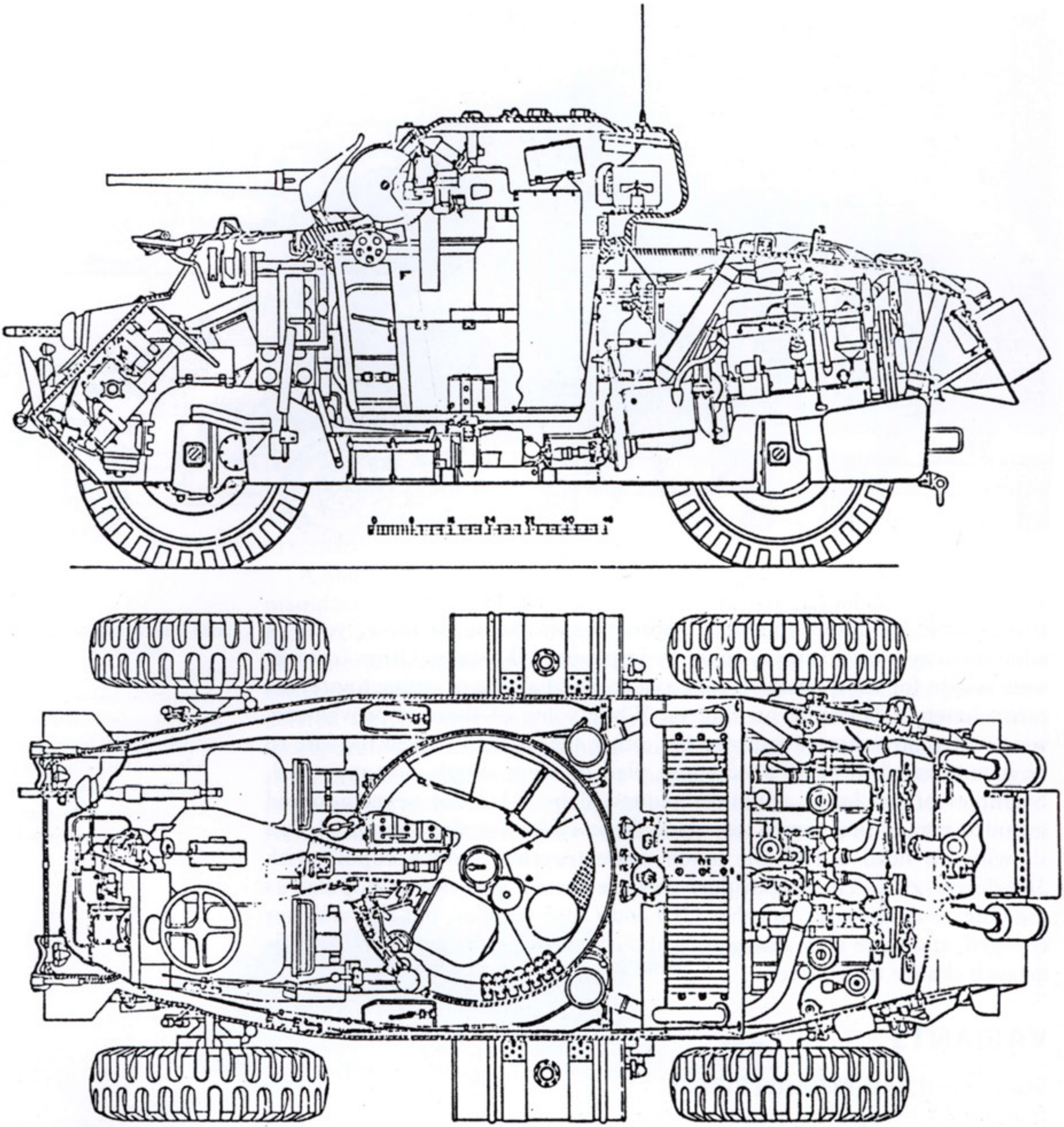
Scale plan of exterior.

a committee to discuss possible improvements. Some of these, such as additional stowage features, could be implemented locally. Other features were sought for safety reasons, such as a counterbalance or spring to prevent turret hatches slamming on fingers. While some of these improvements were undertaken during manufacture, other suggestions arrived too late to be incorporated into the production plan or were simply not approved. Examples of the latter originally requested by RAC but never adopted included a modified turret seat to make it easier for the commander to sit with his head out of the hatch while traveling, and a cupola with 360-degree view. The Logansport traverse system was not as popular as the Oilgear design used in other US Lend-Lease vehicles, but this was not changed, and there were discussions about improving the gyrostabilizer but no such change took place.

VARIANTS

Staghound Anti-Aircraft (T17E2)

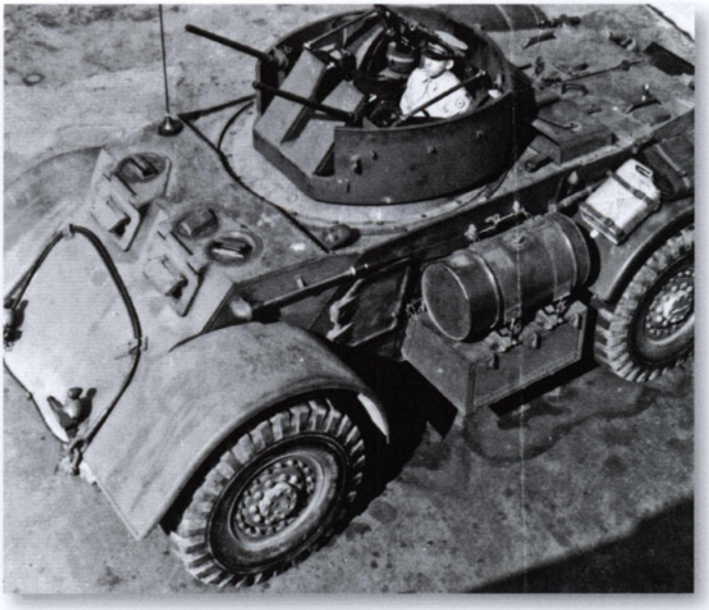
In February 1943, while Staghound production was still under way, British officials raised the issue of an anti-aircraft variant. British armored-car units in the Western Desert had come under frequent Luftwaffe attack and now mobile air-defense capability was sought. The obvious solution was to use the British-designed Frazier–Nash twin .50cal machine-gun turret, which was already being manufactured in the United States by the Norge Division of the Borg-Warner Corporation, as the N80 turret for British motor torpedo-boats. This had to be adapted to an armored-vehicle configuration including a turret race, turret basket, and armored turret. The turret was too small to accommodate the vehicle radio, so this was stowed in the hull in place of the bow machine-gun. The T17E2 pilot was shipped to Aberdeen Proving Ground for firing tests in March 1943 and returned to Chevrolet for modification and final development work. Improvements included a General Electric power-booster ammunition feed and an improved gunsight.



Scale plan of interior.

The turret was redesigned, using welded construction and curved plates for a more efficient layout. The crew of the vehicle was reduced from five to three due to the limited space in the turret. A total of 2,610 rounds of ammunition were stowed. British representatives were happy enough with the design that the existing production contracts were modified so that instead of the 3,800 T17E1 armored cars planned under the schedule of September 1, 1942, a total of 1,000 units would be diverted to the T17E2. The first production vehicle was completed in September 1943 and in December sent to Fort Knox for troop tests and to the Antiaircraft Artillery Board at Camp Davis, North Carolina, for firing trials. Some modest modifications were made during the production run based on these tests.

Production was completed in April 1944. In the end, however, this proved to be the least successful version of the Staghound as by the time it arrived in Italy and North-West Europe in the summer of 1944, the Luftwaffe threat had largely evaporated.

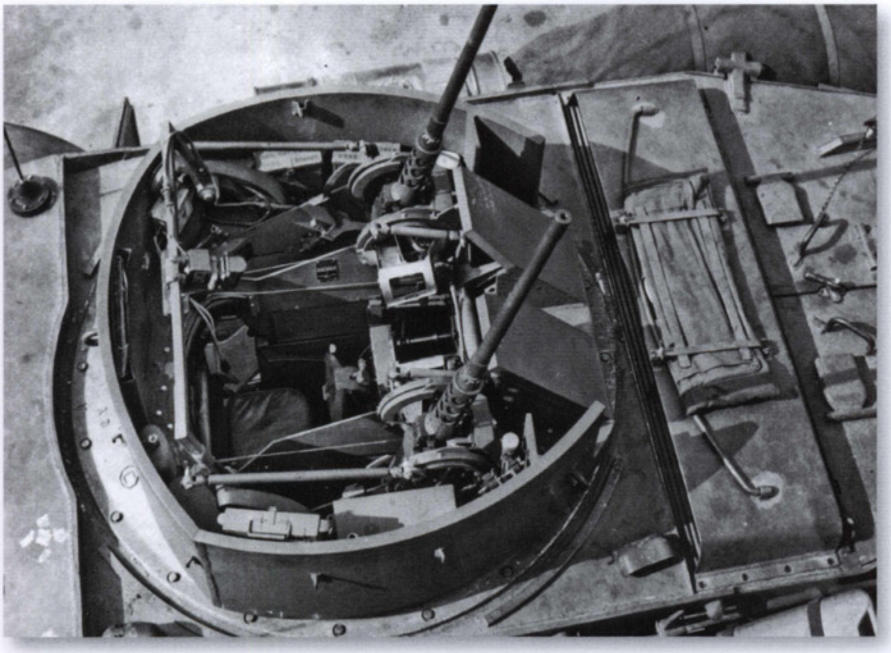


The T17E2 represented an effort to develop an anti-aircraft version of the Staghound armored car with a twin .50cal heavy machine-gun turret. Although 1,000 were built, they were the least successful version of the type as there was little need for air defense against the Luftwaffe in the final year of the war. (NARA)

Howitzer Staghound (T17E3)

In the autumn of 1943, British army officers in Washington forwarded a request to Ordnance for the design of a fire-support version of the Staghound for dealing with roadblocks and other tactical obstructions too formidable for the Staghound's small 37mm gun. Since the requirement was for only 100 vehicles, the project did not warrant the development or expense of a new turret. Ordnance had already developed a 75mm howitzer turret for the M5 light tank that had been accepted for service as the M8 75mm howitzer motor carriage in May 1942 and was already in production. This was readily adaptable to the Staghound hull, and Chevrolet quickly constructed the T17E3 pilot in October 1943; this was sent to the Erie Proving Ground in December 1943. However, British interest in the requirement waned and the project ended by late December 1943, even though it was not officially cancelled until late 1944.

Even though the T17E3 project never proceeded beyond the pilot, the requirement still existed. As detailed below, the New Zealand Divisional Cavalry Regiment in Italy had developed a field modification by substituting 3in Mk I howitzers for the usual 37mm gun. These conversions, undertaken in



The T17E2 Staghound AA substituted an armored Norge N80 twin .50cal heavy machine gun turret for the usual 37mm gun turret. In this overhead view, the guns are at full elevation but pointed towards the rear of the vehicle. (NARA)

Italy and variously referred to as the "Staghound 3in" or "Staghound II". A more elaborate fire-support variant was proposed in Britain in the autumn of 1943 using surplus Crusader Mk III tank turrets. A new turret ring was adapted to the Staghound and the Staghound turret basket was modified to fit the Crusader turret, which was re-armed with a more powerful Mk V 75mm gun and a co-axial Besa machine-gun. A Staghound III pilot was put together in December 1943 and eventually sent for trials at the Fighting Vehicle Proving

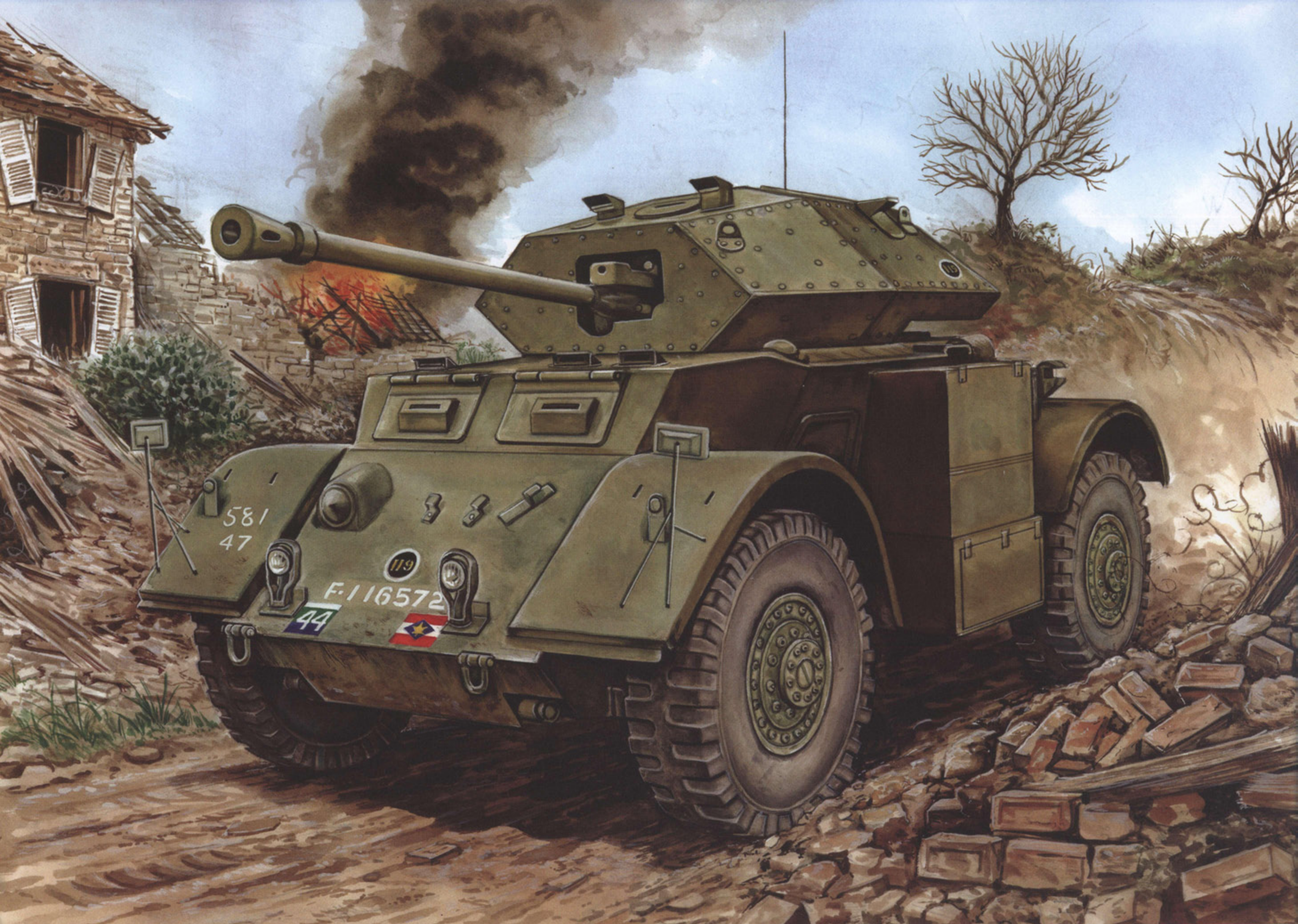
US MEDIUM AND HEAVY ARMORED CAR PRODUCTION

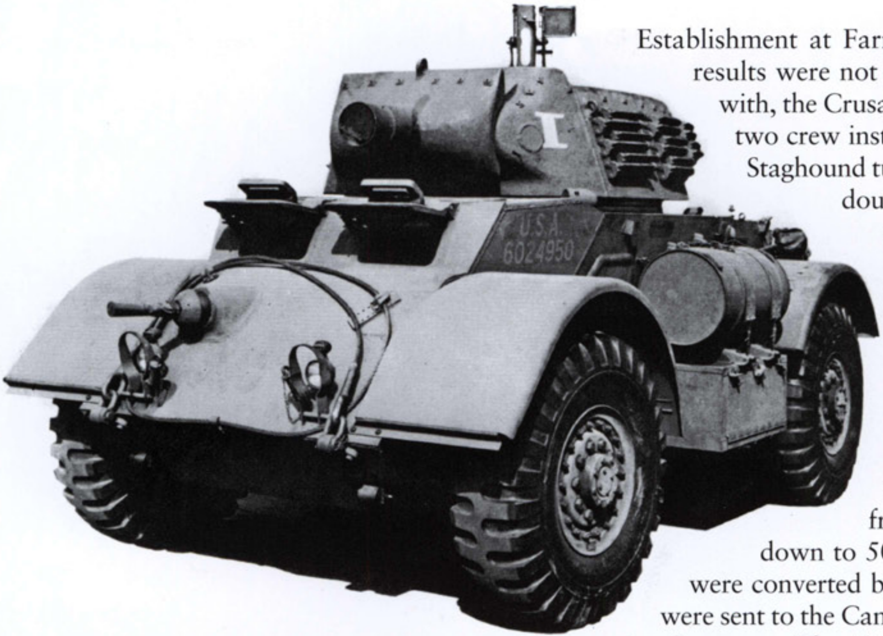
1942	M5 (T17)	M6 (T17E1)	M6 (T17E2)	M7 (T18E2)
Oct		28		
Nov	8	54		
Dec	24	75		2
1943				
Jan	66	100		1
Feb		68		
Mar	124	312		9
Apr	26	275		7
May	2	256		11
Jun		322		
Jul		279		
Aug		335		
Sep		228		
Oct		198	12	
Nov		147	71	
Dec		167	128	
1944				
Jan			220	
Feb			200	
Mar			225	
Apr			144	
Total	**250**	**2,844**	**1,000**	**30**

B

STAGHOUND MK III, 11 TROOP, C SQUADRON, 12TH MANITOBA DRAGOONS, II CANADIAN CORPS, GERMANY, 1945

The rebuilt Staghound Mk III was refinished in SCC 15 Olive Drab, a color adopted by the British army in April 1944 to avoid the need to repaint the many US vehicles received via Lend-Lease. The British color was essentially similar to US olive drab. As the corps reconnaissance unit, the arm-of-service insignia is the usual green/blue square with a white band above. The corps insignia is seen on the left side. The squadron insignia is a white circle on black background on the glacis plate and rear turret side; inside is the troop number and vehicle number. A movement marking is chalked on the right fender. The vehicle census number F116572 is painted on the glacis plate under the squadron marking.


119
581
47
119
F.116572
44



Establishment at Farnborough. However, the trial results were not entirely satisfactory. To begin with, the Crusader turret accommodated only two crew instead of the three in the normal Staghound turret, so the commander had to double as the loader. This created a tactical disadvantage since the commander, distracted by these duties, could not observe the fall of shot when the gun fired to provide any necessary corrections. The tests dragged on until January 19, 1945, and the requirement was trimmed from the original 100 vehicles down to 50. In the end, only 32 vehicles were converted by war's end and the first three were sent to the Canadian XII Manitoba Dragoons in Germany. The Canadians concluded that the Staghound III was "probably the best all-round 75mm armoured car available" but the type's significance proved to be negligible due to its late arrival.

ABOVE The T17E3 combined the turret from the M8 75mm howitzer motor carriage with the T17E1 hull to provide a fire support version. However, it never entered production beyond this pilot. (NARA)

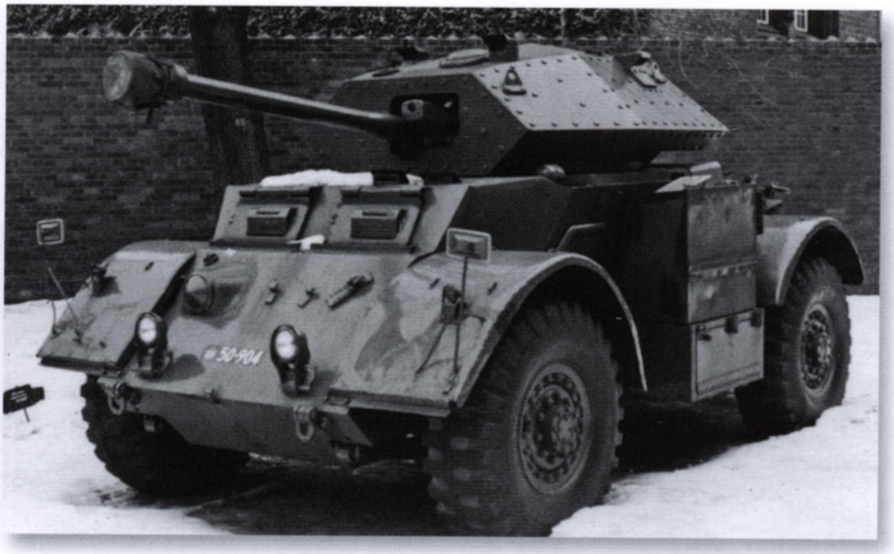
Specialized Staghounds

A variety of requirements were established for specialist Staghound variants, primarily oriented towards command issues. A command version that was mooted would have had the gun removed and map and filing desks added inside the turret. Although two of these were nominally authorized under war establishment for each armored-car regiment, few if any of these conversions were formally undertaken. Instead, many commanders used normal Staghounds fitted with a second radio in the hull. However, some senior commanders preferred more spacious alternatives. One conversion in North-West Europe was the Staghound Charger, sometimes carried out using surplus Staghound AA cars. These had the turrets removed and a plastic windshield fitted at the front of the opening. This gave the regimental commander more room and better visibility. A second authorized command type was designated "Staghound control", with four assigned to each armored-car regiment. These headquarters vehicles had a second No 19 radio

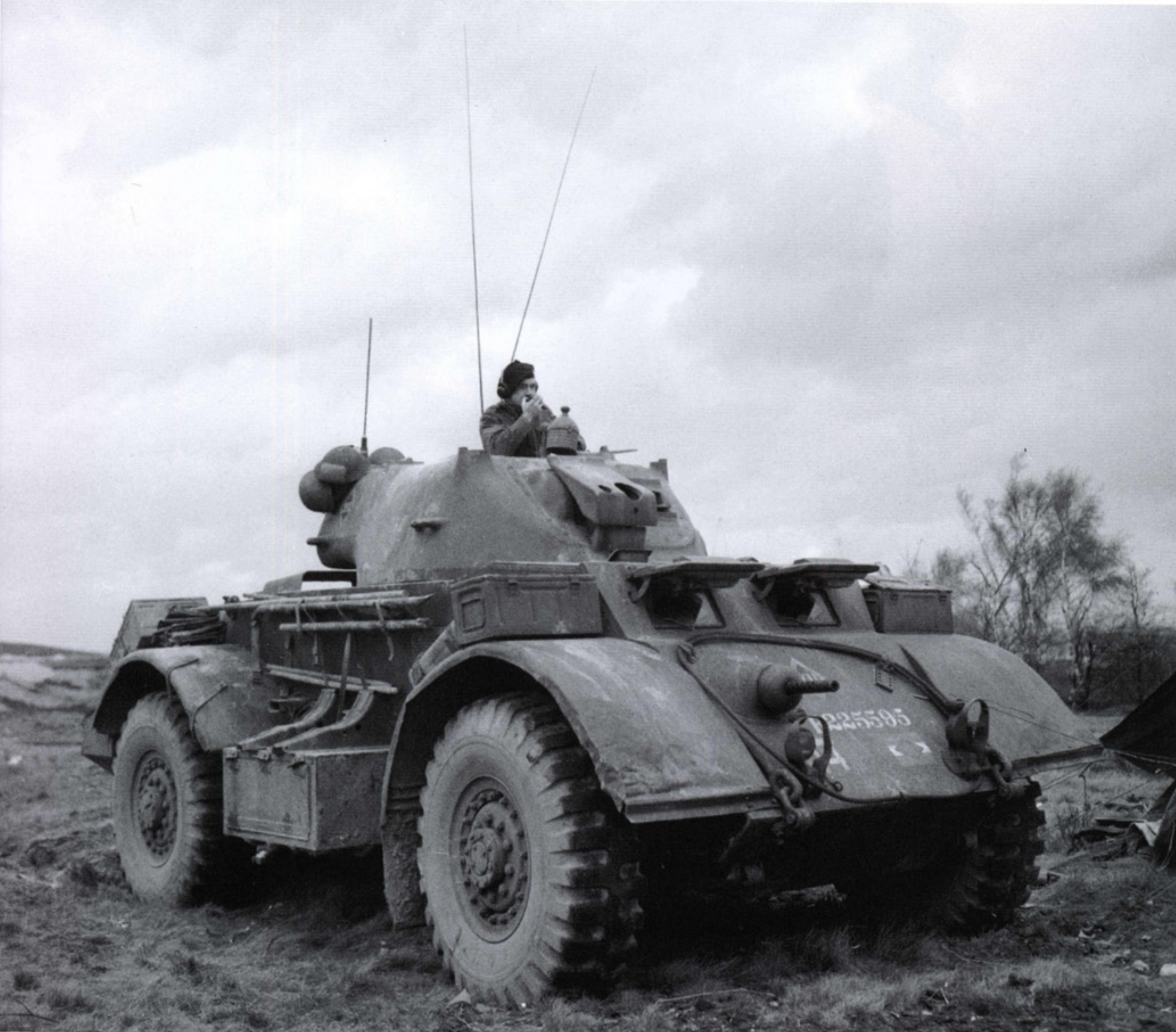
US MEDIUM AND HEAVY ARMORED CAR CONTRACTS AND REGISTRATION NUMBERS

Type	Vehicles	Contractor	Registration numbers	Serial numbers
M5 (T17)	250	Ford	6025150–6025399	2005–2254
M6 (T17E1)	1,500	Chevrolet	6022838–6024337	5–1504
	1,000	Chevrolet	6030712–6031711	4275–5264
	300	Chevrolet	6024838–6025137	5767–6018
	44	Chevrolet	6090205–6090248	6065–6108
M6 (T17E2)	500	Chevrolet	6024338–6024837	1505–2004
	500	Chevrolet	60119997–60120496	6109–6608
M7 (T18E2)	30	Yellow	6030412–6030441	3–32

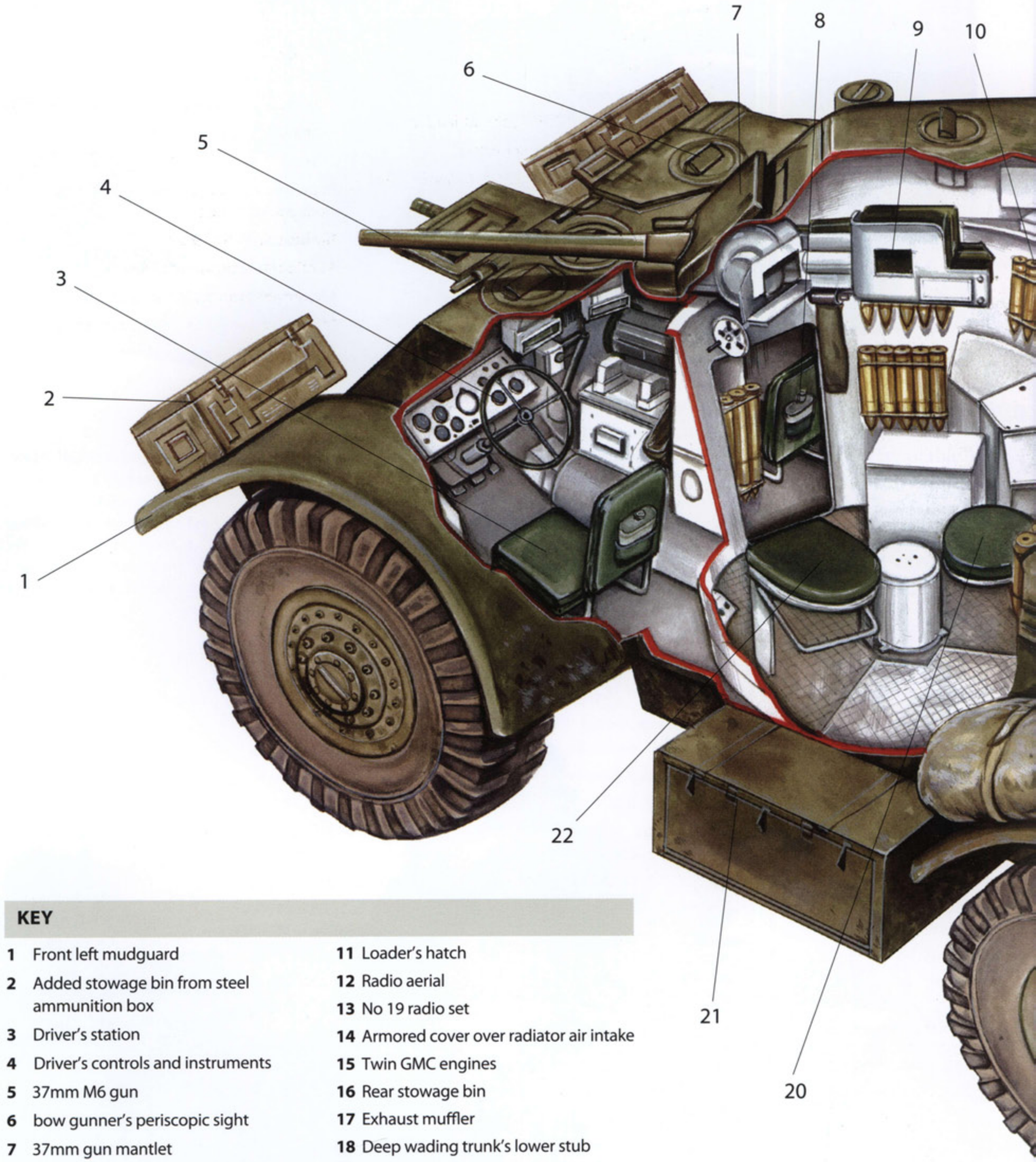
OPPOSITE The Canadian army operated Staghound Rear-Link, a headquarters version that had the gun removed in order to accommodate a larger CR-299 radio set to communicate between regiment and corps headquarters. This example was serving with XII Manitoba Dragoons near Zeedam, Netherlands, on April 4, 1945. (NAC Ken Bell PA130920)



LEFT The eventual solution for up-arming the Staghound was the Mk III, which substituted a surplus Crusader tank turret and 75mm gun. Only 32 of these were converted and a handful were deployed with the Canadian XII Manitoba Dragoons in April 1945. Eight were supplied to the Danish army in the late 1940s and one is seen here, preserved at the army museum in Copenhagen in the 1960s. (Col R. J. Icks)



C STAGHOUND MK I CROSS-SECTION



KEY

1 Front left mudguard
2 Added stowage bin from steel ammunition box
3 Driver's station
4 Driver's controls and instruments
5 37mm M6 gun
6 bow gunner's periscopic sight
7 37mm gun mantlet
8 Bow gunner's seat
9 37mm M6 gun breech and protective shield
10 37mm ammunition stowage
11 Loader's hatch
12 Radio aerial
13 No 19 radio set
14 Armored cover over radiator air intake
15 Twin GMC engines
16 Rear stowage bin
17 Exhaust muffler
18 Deep wading trunk's lower stub
19 Ration boxes attached for stowage
20 Commander's seat
21 Side stowage bin
22 Gunner's seat

TECHNICAL DATA

Crew: Five (commander, gunner, loader, driver, bow gunner)

Length: 216in

Width: 106in

Height: 112in

Ground clearance: 15in

Weight: 27,220lb (30,705lb combat-loaded)

Power-to-weight ratio: 12.6hp/ton

Armor: 22mm upper bow, 19mm hull side, 25mm turret front, 32mm turret side

Armament: Main: 37mm M6 gun in M24A1 mount (103 rounds); auxiliary: three .30cal machine-guns (co-axial, front hull, turret AA mount; 5,250 rounds)

Powerplant: Two GMC 270 6cyl, 97hp (194hp total)

Fuel: 62gal internal plus two 38gal external tanks

Transmission: Hydramatic 4F 1R

Wheels: Four 14.00 x 20 21-ply combat tires

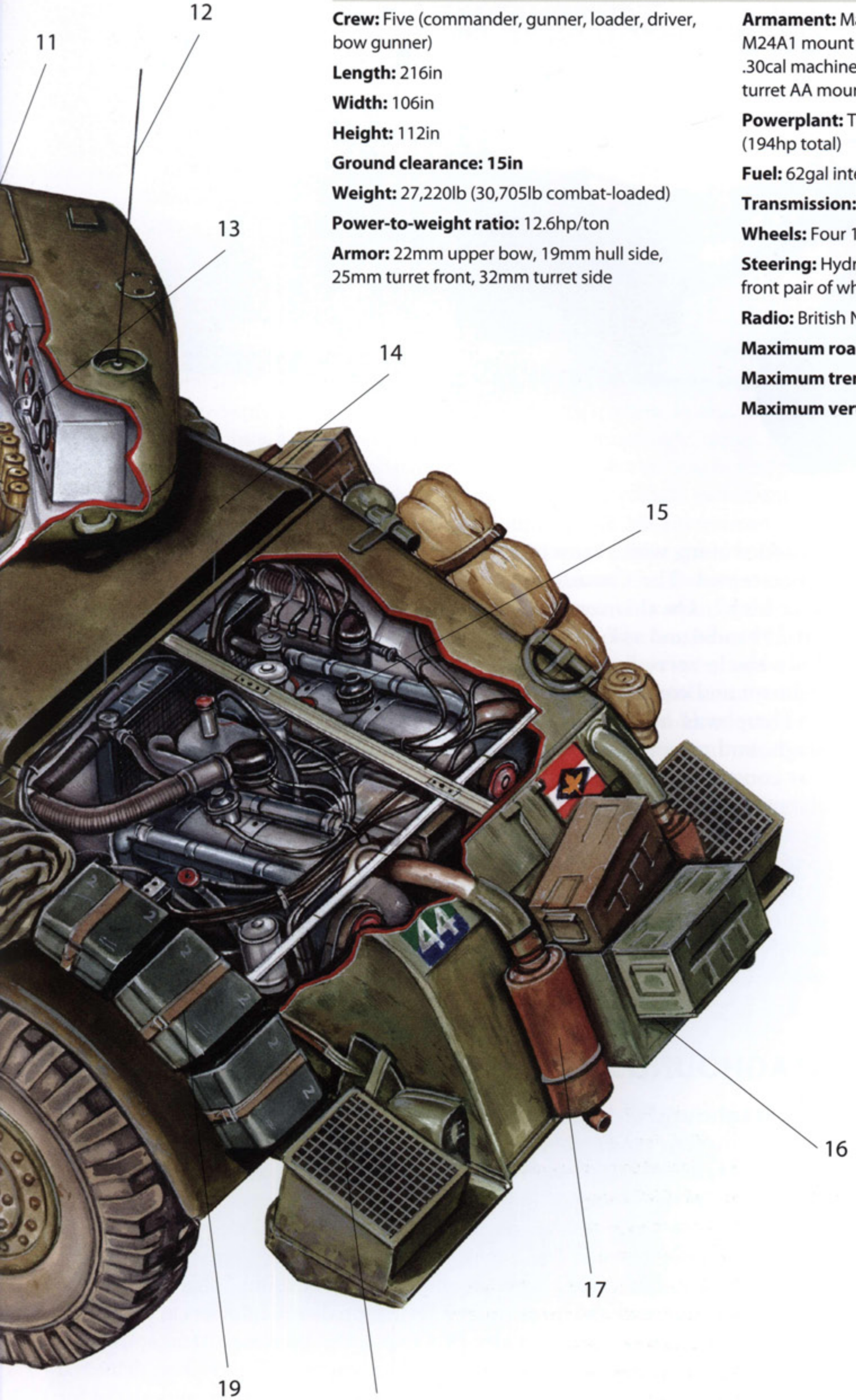
Steering: Hydraulic power-assisted steering on front pair of wheels

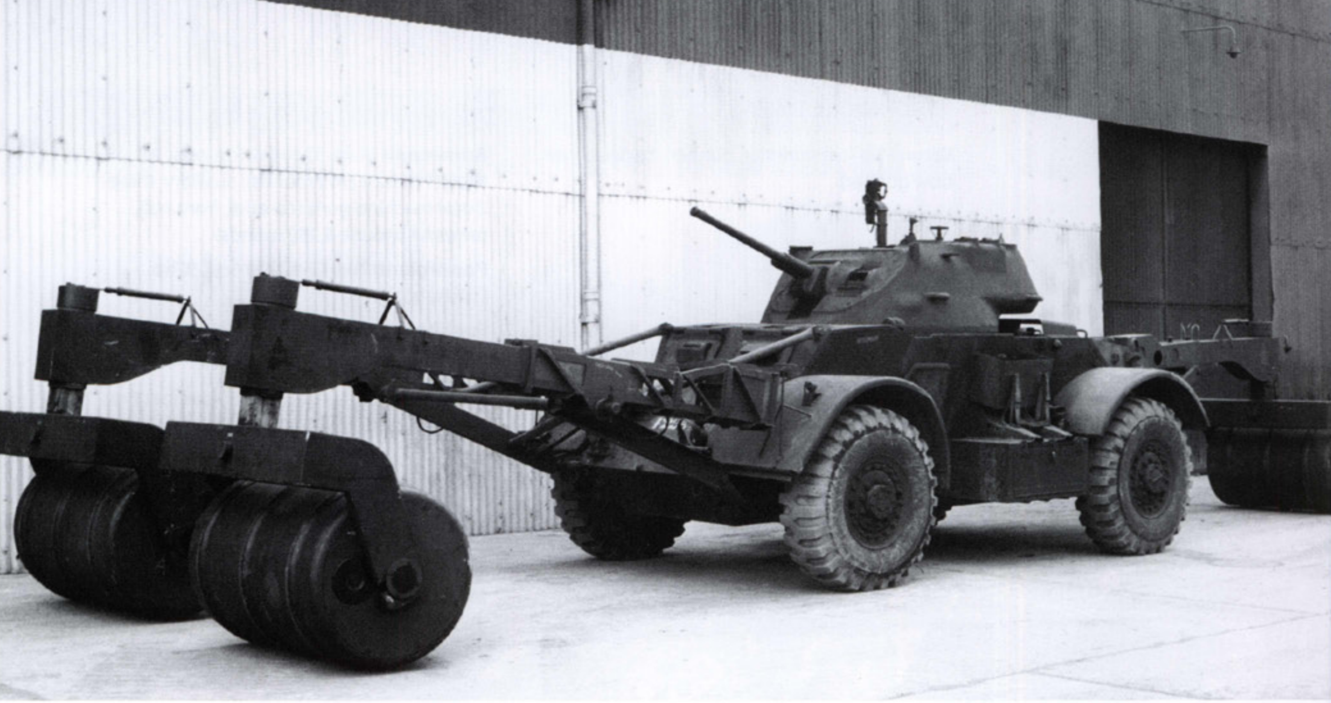
Radio: British No 19 set

Maximum road speed: 55mph

Maximum trench clearance: 1.5ft

Maximum vertical wall clearance: 21in





One of the more awkward contraptions fitted to the Staghound was the Bantu mine-detection system, which used a set of magnetic detectors contained in wooden drums. (IWM MH 14033)

set added along with a stowage box on the outside of the turret; the main gun was retained. The Canadians built their own equivalent, the "Staghound Rear-Link". On this version the 37mm gun was deleted but a long-range CR-299 radio and associated antennae were added. As the designation implies, this vehicle served as a communications link between the armored-car regiment and corps or other headquarters to the rear.

There was also some interest in fielding an engineer version of the Staghound to counter the threat of German anti-tank mines. A prototype was constructed in the spring of 1944 using the Bantu mine detector. This elaborate contraption contained detector coils within wooden drums that were pushed in front of the Staghound. A corresponding device, the AMRCR (anti-mine reconnaissance caster roller), was a mine-rolling system designed to detonate anti-tank mines sufficiently far in front of the Staghound to prevent damage from the blast. However, both systems proved too cumbersome for actual field conditions and in neither case did development proceed beyond trials.

STAGHOUNDS IN SERVICE

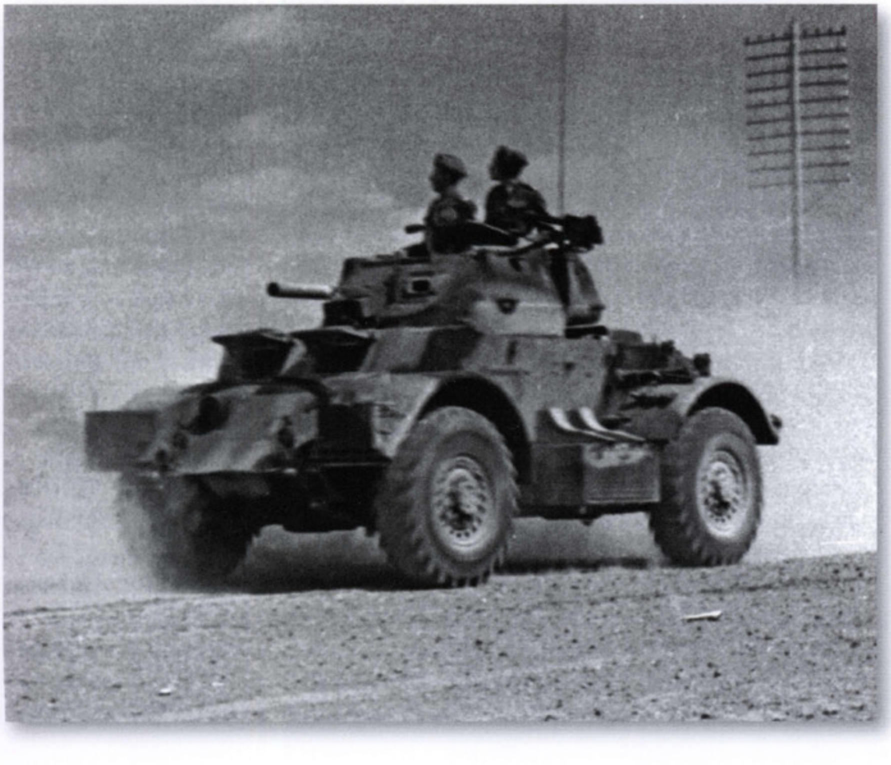
The Staghound enters combat

Between the time the Staghound was first ordered in March 1942 and the time it became ready for shipment into combat in the autumn of 1943, the British army's tactical requirements underwent a substantial change. To begin with, by 1943 the army had finally received an acceptable armored car for its requirements, the Daimler Mk 1 armored car. This was smaller and lighter than the Staghound, but armed with a comparable 2-pdr gun. This vehicle was already deployed with the three corps-level armored-car regiments in the Italian theater, the 1st Household Cavalry (V Corps), the 1st King's Dragoons (XIII Corps), and the 12th Lancers (X Corps). The Staghounds were first delivered to Egypt in the summer of 1943 for re-equipping a variety of units slated for the Italian theater; the majority of these were Commonwealth or Polish units.

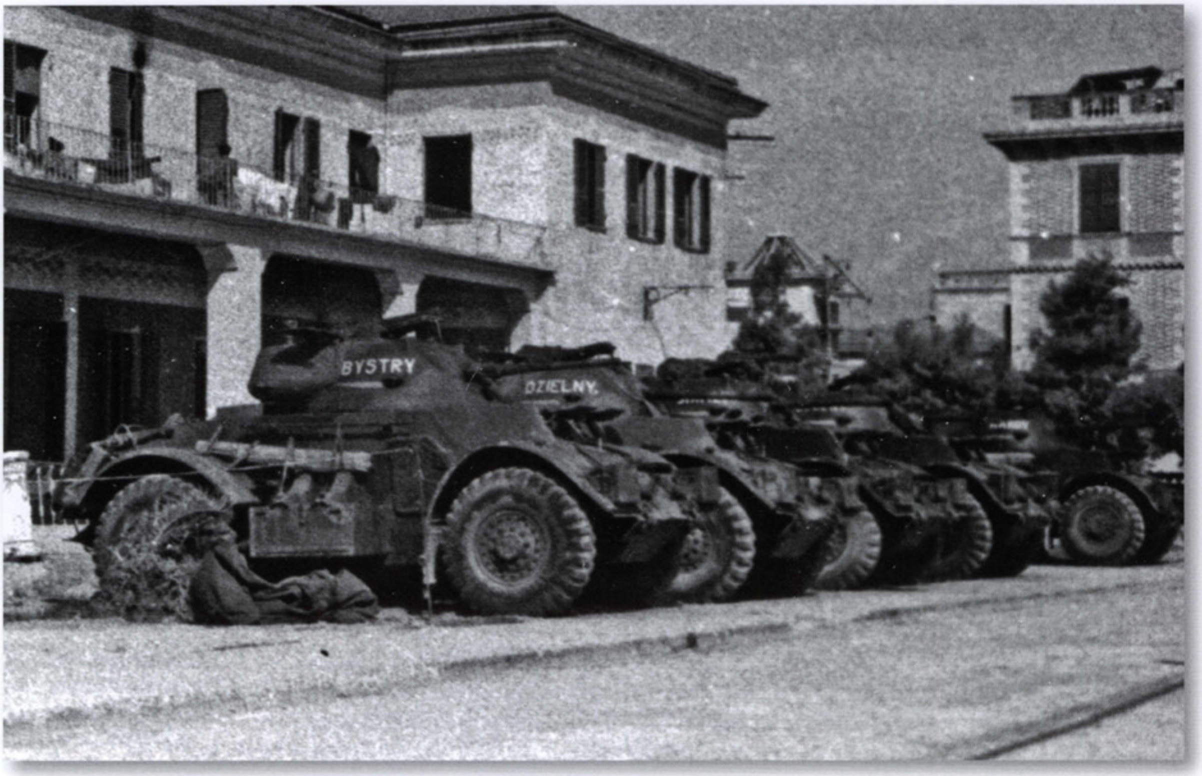
BRITISH STAGHOUND CONTRACTS AND CENSUS NUMBERS

Type	Vehicles	Contract	Census numbers
T17E1	1,000	SM 1263	F116215–F117214
	200	SM 1263	F214038–F214237
	600	SM 1263	F215038–F215637
	500	SM 1263	F225284–F225783
	500	SM 1263	F235262–F235761
T17E2	550	SM 1263	F329860–F330409
	500	SM 1212	F235762–F236261

The most influential Staghound unit in the theater was the Divisional Cavalry Regiment of the New Zealand 2nd Division, which was refitting in Italy in August–September 1943 following its participation in the Western Desert campaign, in which it had been equipped with Stuart light tanks. Aside from being one of the first combat units equipped with the Staghound, the New Zealand unit had a penchant for innovation and vehicle modification that percolated through the other Staghound units in the Mediterranean. The regiment was concerned that the flat trajectory and small high-explosive charge of the Staghound's 37mm gun were not ideal to counter the threat posed by German anti-tank guns. Two of the regiment's lieutenants promoted the idea of substituting a 3in Mk I howitzer for the 37mm gun. The Staghound turret was sufficiently large and robust to accommodate the howitzer, and after some careful work the design was demonstrated to the divisional commander. With his approval, the upgrade was demonstrated to General Headquarters, Mediterranean Expeditionary Force, which approved it for general use. As a



The New Zealand Divisional Cavalry Regiment introduced a number of innovations on its Staghounds, including substitution of a 3in Mk I howitzer for the usual 37mm gun, and the addition of metal ammunition boxes on the front mudguards to carry tire chains. The Polish Staghound regiments in Italy followed suit, and this 3in Staghound can be identified both by the thicker gun tube and the blanked-off hull machine gun position. (Sikorski Institute)



The largest user of the Staghound in Italy eventually became the Polish II Corps, which used the type in most of its divisional reconnaissance regiments. These Staghounds are part of the Polish 15th Poznan Lancer Regiment, the divisional reconnaissance element of the 5th Kresowa Infantry Division in Italy. Their Staghounds typically received names, in this case *Bystry* ("Speedy") and *Dzielny* ("Brave"), which were painted on the turret side above the regimental red-and-white swallowtailed lancer pennion. (Sikorski Institute)

result, a program was initiated in Egypt to re-equip each troop with one 3in Staghound, a type which was later called the "Staghound Mk II".

Another issue was the performance of the Staghound in muddy and wintry conditions. The obvious solution to these traction problems was tire chains, but to facilitate their use chains had to be located, issued and properly stowed on the Staghounds. An alternative solution hit upon was to cut a rectangular opening in the front fenders and weld steel 25-pdr ammunition bins there for stowage of the chains until needed. This feature was adopted throughout the Mediterranean theater, but was later extended to some units in North-West Europe as well.

The first British Staghound armored-car regiment to deploy to Italy was the 27th Lancers, which replaced the 1st Household Cavalry as V Corps' reconnaissance regiment starting in October 1943. The third Staghound regiment into Italy in the autumn of 1943 was the Polish Carpathian Lancers (*Pułk ułanów karpackich*, or PUK) which was initially the armored-car regiment of the Polish II Corps. Besides the units based upon the Staghound, other armored-car regiments equipped with the smaller Daimler or other armored cars were often allotted Staghounds for their headquarters since the latter vehicles' more spacious interior was more satisfactory for staff and in terms of extra radios.

Unfortunately, the Staghound's debut in Italy was not opportune due to weather and geography. The type had been designed with the lessons of the desert campaign in mind – here, endurance, durability and speed being paramount. On the Italian mountain roads and in Italy's muddy winter fields, the Staghound was too large and cumbersome. The problem was not confined to the Staghound, but more broadly affected the role of the armored-car regiments and other light armored reconnaissance formations. During the

Western Desert campaign the armored cars had played a vital role in probing enemy defenses. They could freely operate on a broad front using their speed and mobility to best effect, since virtually all the terrain was navigable. Along the Sangro front in Italy in the winter of 1943–44, they were confined to mountain roads and predictable approach routes which limited their tactical maneuverability and virtually negated their value in conducting deep reconnaissance for corps and divisions. Reconnaissance had to be conducted using dismounted troops or aircraft. The armored-car regiments' other major tactical role – exploiting successful attacks with rapid penetrations deep into enemy territory – became irrelevant once the front line bogged down around Monte Cassino, since there were no penetrations to exploit. Nor did the vehicles have the firepower or armored protection to conduct the type of close infantry support undertaken by Sherman tanks. In February 1944, the Staghound crews of the New Zealand Divisional Cavalry were temporarily converted into infantry during the fighting along the Rapido river near Monte Cassino – a state of affairs they dubbed "infantcavalry". This would not become permanent until December 1944, but reflected changing tactics in the Italian theater and the reduced value of armored cars in such weather and terrain conditions.

The number of Staghounds in Italy continued to increase with the arrival of additional Canadian and Polish Staghound units. The Royal Canadian Dragoons had been equipped with Daimler armored cars in December 1943 but had begun to receive some Staghounds in February 1944. The British tended to favor the smaller Daimler, but the Canadians were not at all pleased with it, preferring the Staghound due to its better reliability and automotive durability. The Daimler required one to three hours' maintenance per day, but with the Staghound it only took a few minutes to check fuel and lubricant levels. Dissatisfaction with the Daimler became so pronounced that the regimental commander recommended it be entirely replaced with the Staghound. This was duly approved in March 1944, although the much-prized 3in Staghound did not become available to the Canadians until December 1944.

In the Polish case, the arrival of more II Corps units from training camps in Egypt and Palestine led to the increase in the number of Staghound regiments from one to three, with the addition of two divisional armored-car regiments: the 12th Podolski Lancers (12. *Pułk ułanów podolskich*) with the 3rd Carpathian Infantry Division, and the 15th Poznan Lancers (15. *Pułk ułanów poznańskich*), with the 5th Kresowa Infantry Division. However, the increasing numbers of Staghounds did not imply increased armored-car activity. In the Polish case, in May 1944 all three cavalry regiments were committed to fighting at Monte Cassino in a dismounted role. Following the capture of Monte Cassino, the Polish Staghound units underwent a substantial reorganization, with the Carpathian Lancers switching to Sherman tanks, the 12th Podolski Lancers taking their place as the corps reconnaissance regiment, and the newly arrived 7th Lublin Lancers (7. *Pułk ułanów lubelskich*) and 25th Wielkopolski Lancers (25. *Pułk ułanów wielkopolskich*) taking over divisional reconnaissance slots. By the summer of 1944 the Polish II Corps had ended up with the most Staghounds of any of the various contingents in Italy.

The Staghound regiments finally had their moment in the sun when the Italian campaign regained its momentum in the summer of 1944, during the advance on Rome. The battlefield became fluid enough for armored-car regiments to play a role in pursuing retreating German forces. By September

1944, Staghound strength in Italy had reached more than 600 armored cars. However, by the autumn of 1944 Italy had become a backwater and was starved of resources which were directed to North-West Europe instead. Some units which had been reorganized with Staghounds were sent elsewhere. The Italian front became bogged down again in the winter of 1944–45, with predictable results for armored-car operations. For example, in late November 1944 the New Zealand Divisional Cavalry was once again dismounted and used as infantry to reinforce the rest of the division. The Staghound squadrons saw another flurry of activity in the spring of 1945 when the front became mobile again and Allied formations headed north towards the Alps.

A significant number of Staghounds were deployed to the Middle East in 1943–45, including training units in Egypt. A number of units were deployed on garrison duty in Palestine, and the Indian 31st Armoured Division in Iran employed Staghounds in the 13th Lancers and later the 3rd Hussars.

STAGHOUND STRENGTH IN ITALY, 1943–45

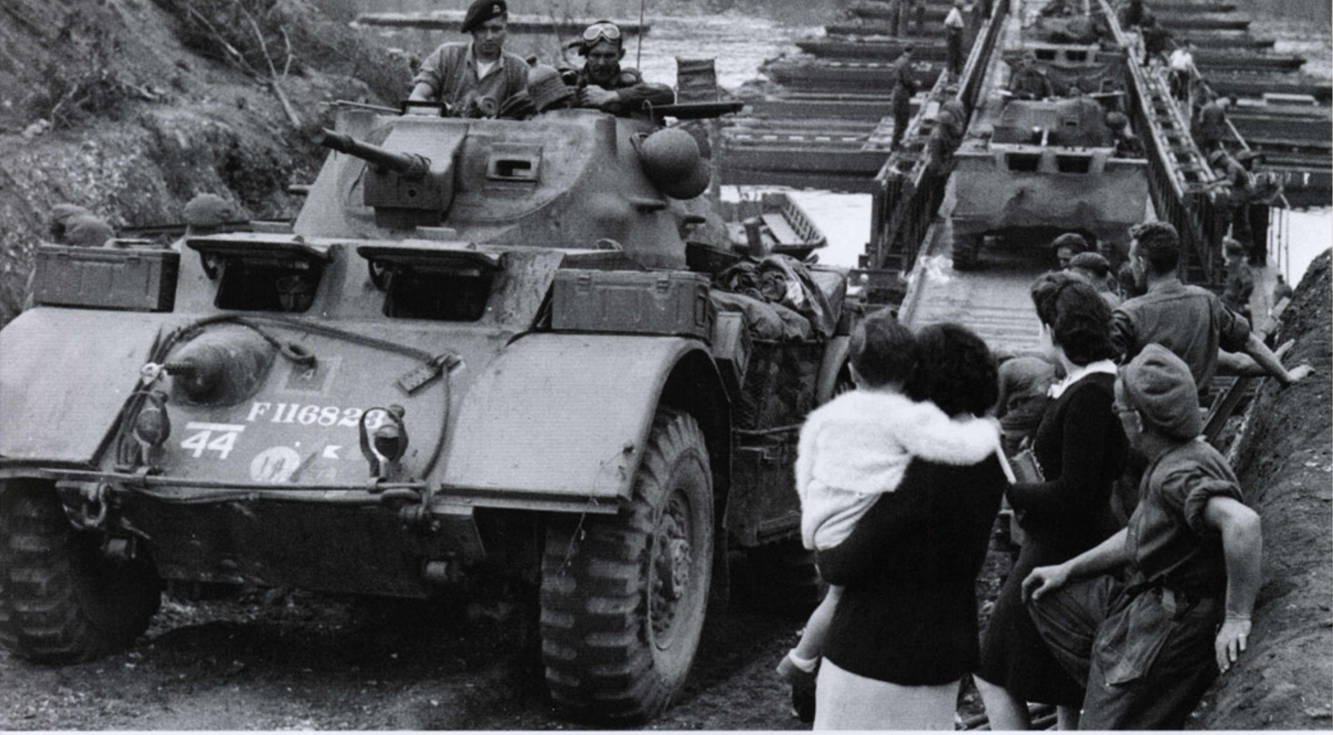
15 Army	Staghound Mk I	Staghound Mk II	Staghound AA	Total
2 Oct 43	55			55
23 Sep 44	476	64	91	631
30 Dec 44	291	4	5	300
25 Jun 45	660	67	78	805

The Staghound in North-West Europe

In 1944, the war establishment for a British armored-car regiment nominally included 45 Daimler cars in four squadrons, a headquarters squadron with 14 Staghounds including two command and four control cars, and up to five Staghound AA cars. However, not all of these specialized types were available on D-Day, and in the summer of 1944 actual Staghound strength in the regiments was often less. The Staghound was popular for its rugged durability, but acclaim was far from universal. According to the 11th Hussars' regimental history, troops "found it unwieldy and it never earned their affection".

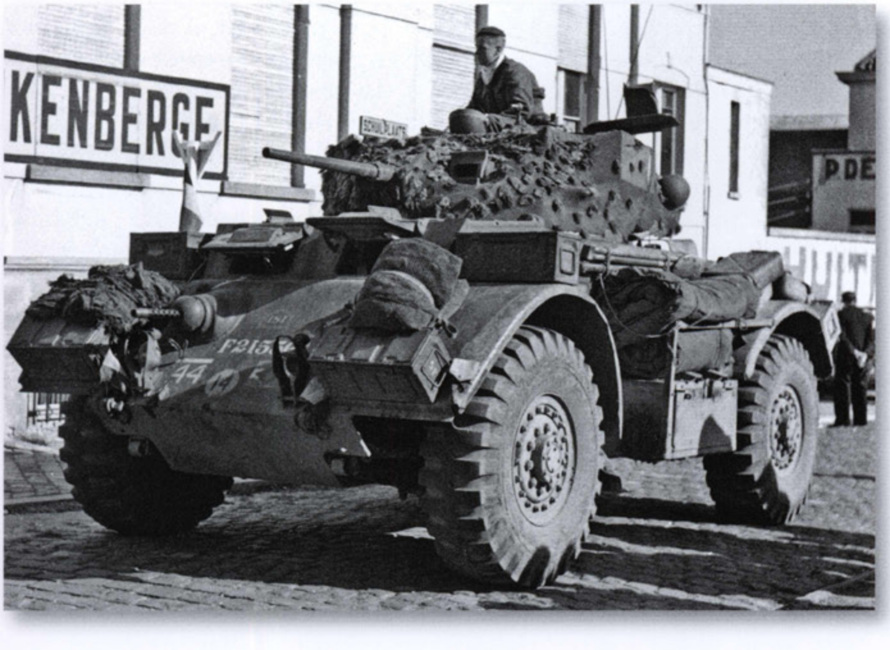
The main exception to the organization scheme detailed above was the Canadian army, which continued to show a preference for the Staghound over the Daimler. During 1943, the Canadian army's Armoured Car Subcommittee had studied the various British and American armored cars that were likely to be available including the Staghound, the Daimler and the M8 Greyhound. On September 25, 1943, a formal decision was made in favor of the Staghound for the armored-car regiments, but for the lighter Daimler for the reconnaissance regiments within infantry divisions, since there was an established policy limiting divisional bridging to Class 9 (nine tons), which excluded the heavier Staghound.

The II Canadian Corps' armored-car regiment was the XII Manitoba Dragoons (18th Armoured Car Regiment), which had been re-equipped with the Staghound starting in the summer of 1943. The Staghound was very popular with the unit due to its automotive reliability. As with the New Zealand units in Italy, the Manitoba Dragoons liked to tinker with their vehicles. One innovation adopted in Normandy was adding


A XII Manitoba Dragoon Staghound crosses the Seine River near Elbeuf on August 28, 1944. The Manitoba Dragoons formed the Canadian corps' reconnaissance regiment and served as flank security during the advance to Falaise and beyond in August 1944. (NAC Harold Aikman PA-144143)

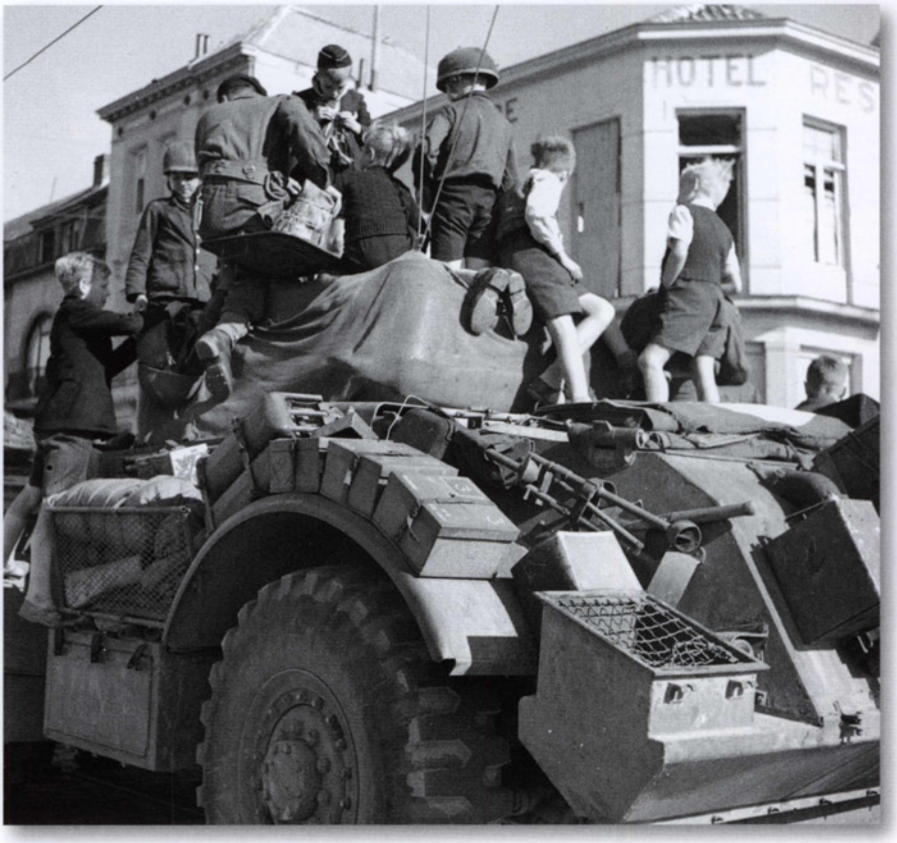
fittings on the hull side for carrying a pair of 12ft sections of No 9 track bridge to assist in handling craters, small waterways, damaged bridges, trenches, and other obstacles. These were usually deployed at the ratio of one set per squadron HQ.

The initial fighting in Normandy through early August was very frustrating for the regiment as there was little freedom of action in the constricted bridgehead until the breakout started on August 8, 1944. As a result, the unit was frequently employed in a dismounted role. It was during the August breakout beyond Falaise that the XII Manitoba Dragoons was finally able to operate in a classic cavalry role – exploiting the Allied breakthrough, conducting deep reconnaissance and raids, disrupting the German retreat and



The Staghound of Tpr F. C. Seabourne of D Squadron, XII Manitoba Dragoons, in Blankenberge, Belgium, on September 11, 1944. By this time some of the squadrons had found some shrimp net which they draped around the turret for attaching camouflage. Although the Staghound was a large vehicle, the turret basket limited the amount of space available inside the hull, so much of the crew's stowage was attached outside – as seen here. (NAC Ken Bell PA-140862)

Children play on a Manitoba Dragoons Staghound in Blankenberge, Belgium, on September 11, 1944. This view shows some of the unique details of the Canadian Staghounds. The container at the lower rear of the hull is the stub from the deep-wading trunks used when the regiment landed in Normandy. A frame with mesh has been welded in place of the auxiliary fuel tanks on the hull side to help accommodate crew stowage. Ration boxes have been fitted to the mudguards as another way of increasing exterior stowage. The muffler has a metal contraption fitted to it which was developed in the Italian theater as an improvised method for heating water for cooking and preparing tea. (NAC Ken Bell PA-144147)



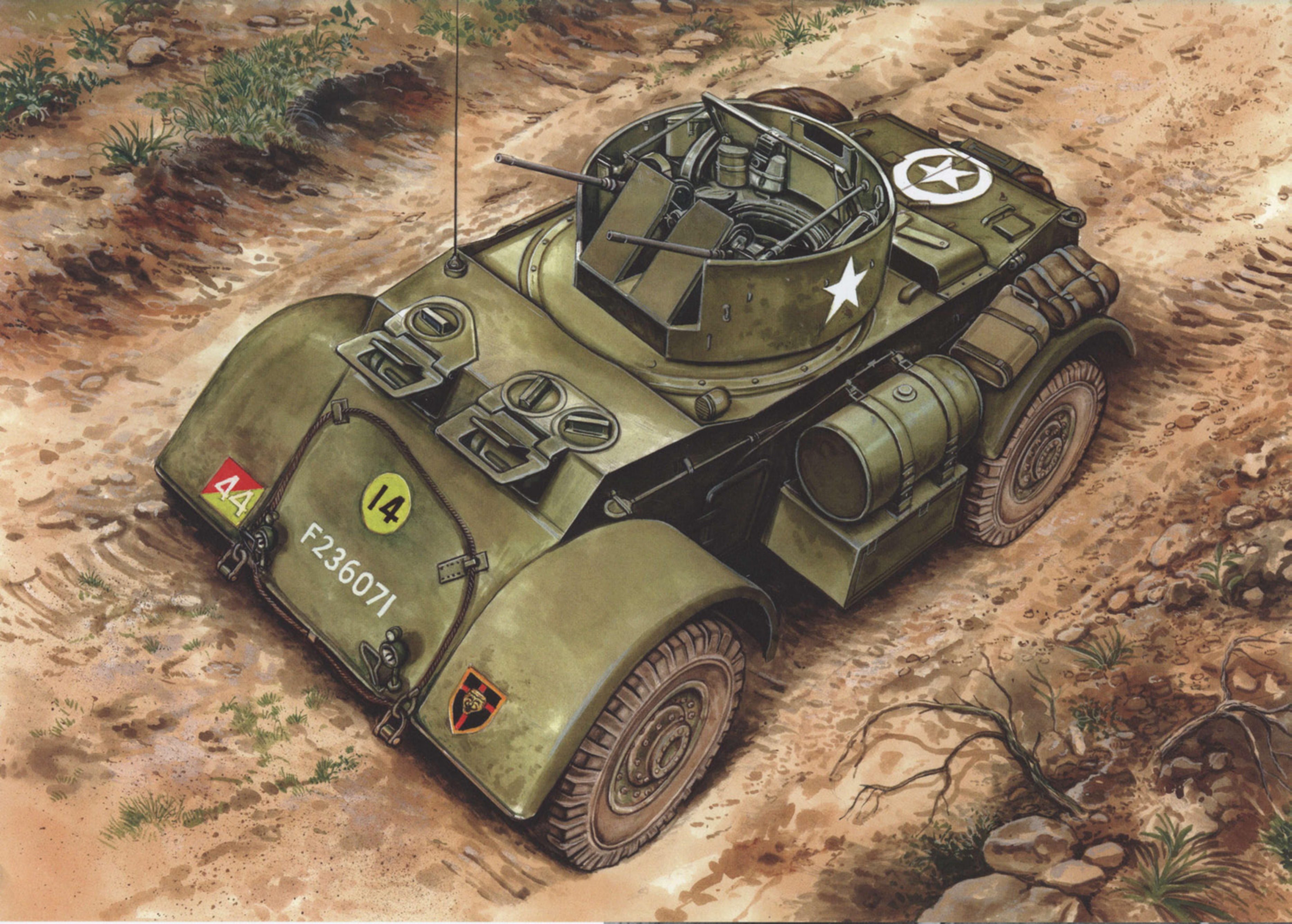
providing flank security to the corps. The regiment served in a flank security role on the easternmost flank of the 21st Army Group advance during Operation Tractable – the advance on Falaise on August 14–16.

During the fighting for the Falaise Gap the regiment was sent to make contact with the Polish 1st Armoured Division, in an isolated spearhead near Trun. Reports of German traffic fleeing out of the pocket near St-Lambert-sur-Dives led the regimental commander, LtCol James A. Roberts, to send two Staghound squadrons to block the exit on August 20. Lt Woodward McKeough's troop was the first to arrive and described the ensuing firefight as "shooting fish in a barrel". The troops destroyed three half-tracks, two tanks, and several trucks and damaged two more tanks. The troop expended all its 37mm ammunition, before the remainder of B and C Squadrons arrived and joined in the one-sided attack. The unit's war diary remarked: "This particular incident is a job that armoured car troops sometimes get. They put their heart and soul into it as it is a reward for the long and cautious patrols they may be called on to do when firing

D

STAGHOUND AA, 1ST BELGIAN INDEPENDENT ARMOURED BRIGADE GROUP, BELGIUM, SEPTEMBER 1944

The Belgians served with Montgomery's 21st Army Group, so markings practices followed the British pattern. The vehicle is finished in overall olive drab. The unit insignia is on the left fender while the arm-of-service square is on the right. The yellow/black bridging circle is on the center of the glacis plate, with the census number below in white. A white Allied star is carried on either side of the turret while the standard Allied air-identification star is painted on the engine deck.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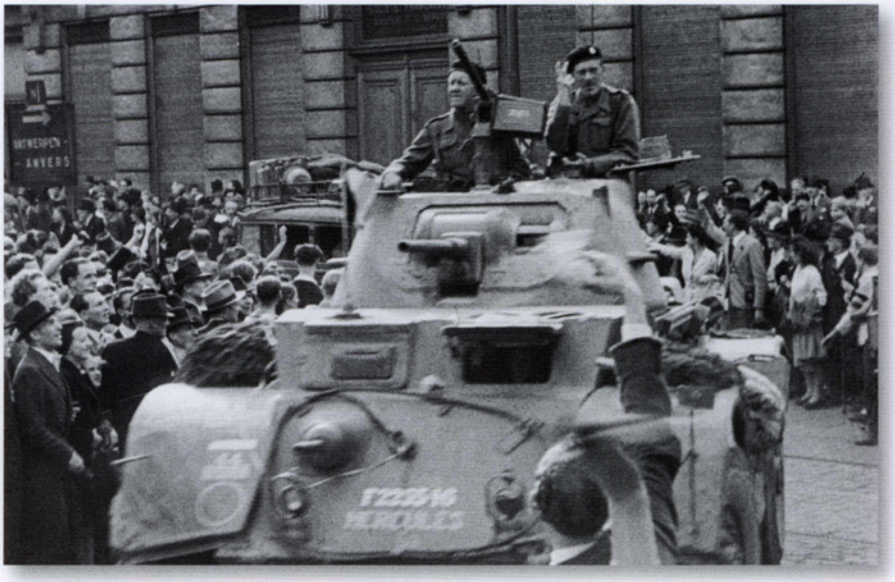
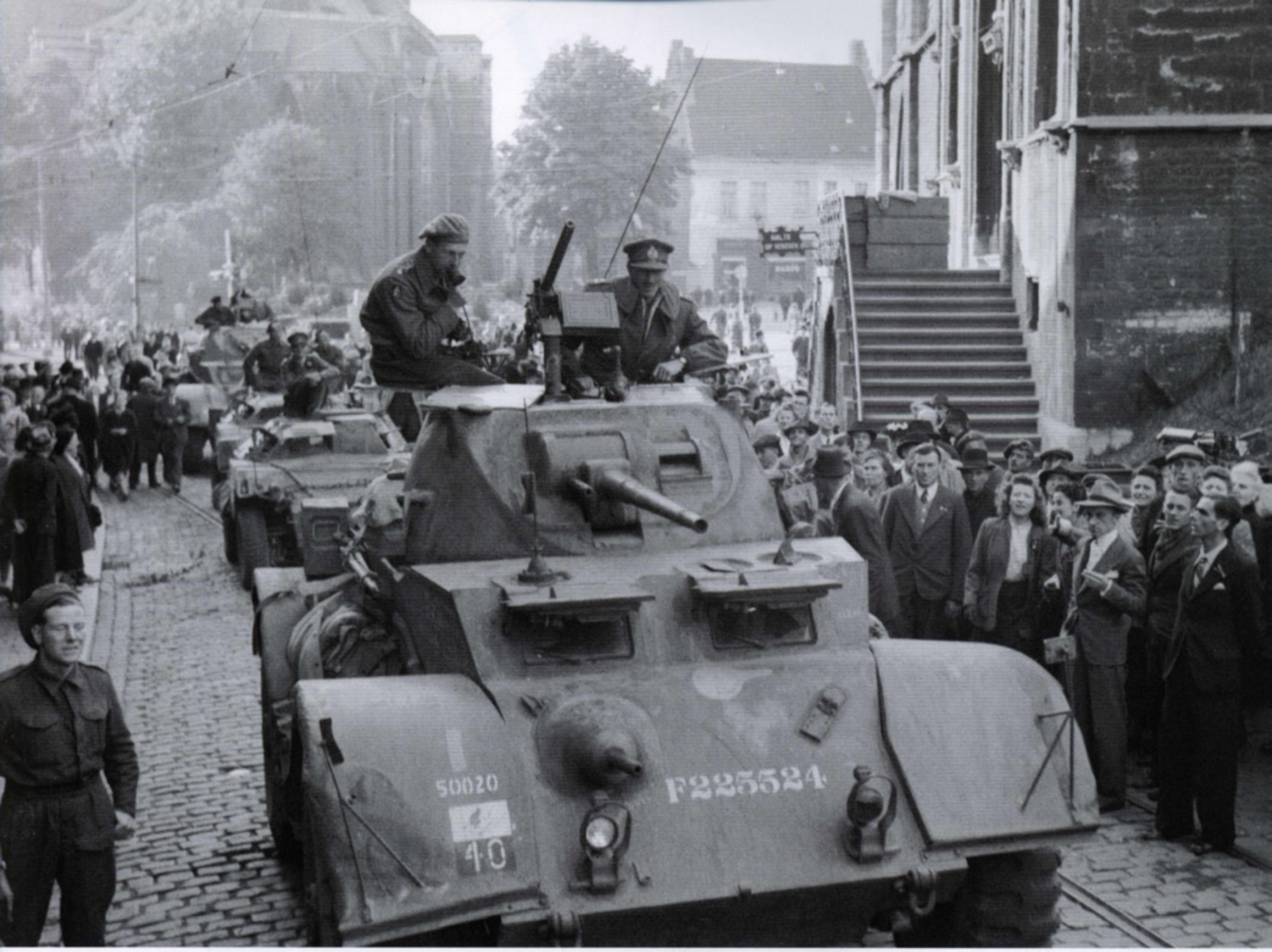
their guns is only permissible for their protection." The next day, the same troop had its first encounter with a German 8x8 armored car, probably a SdKfz 234. The latter was quickly knocked out by Sgt D. L. Yonge's Staghound. The unit war diary recorded: "This is another dream for the armoured car troops, to meet their equal and show who is better. The natural outcome was that Sergeant Yonge reported knocking out and brewing one 8-wheeled armoured car." Sgt Yonge received the Croix-de-Guerre for his role in reconnoitering the Falaise Gap the day before, knocking out several German armored vehicles in the process.

The most famous incident involving the Canadian Staghounds in France occurred on August 30, 1944, during the race beyond the Seine. The Staghound of Sgt Ross J. Bell from C Squadron was on patrol when troop commander Lt W. Laird's vehicle up ahead was knocked out by a Panzerfaust anti-tank rocket. Sgt Bell's Staghound was trapped in close country and could not turn around, so Sgt Bell ordered his driver to proceed at full speed down the sunken country road. Careening down the road at 60mph, the Staghound overran a German infantry unit of some 60 soldiers with three anti-tank guns. On the approaches to the village of Bierville, a German tank blocked the Staghound's way. The unit war diary remarked: "They politely made room for each other to pass. No fire was exchanged." Beyond the village, the Staghound encountered a German artillery battery on the move on the Rouen–Neufchatel road, and shot up the column, killing or wounding 70–80 horses and 200–300 troops. The Staghound crew was now deep behind German lines and out of ammunition, and it took a day to work its way back to Allied lines with the help of local French Resistance units. Sgt Bell received the Military Medal for his exploits.

If the August fighting demonstrated the potential of armored cars during mobile operations, it also highlighted the costs. The XII Manitoba Dragoons suffered a third of its entire wartime casualties during a few weeks of fighting. The main cause of vehicle casualties was entrenched German anti-tank guns. The Staghound's thin armor could not withstand such weapons, but at least the vehicle's construction did serve to reduce crew losses. The guns frequently hit the running gear which made up a large fraction of the hull exterior, and



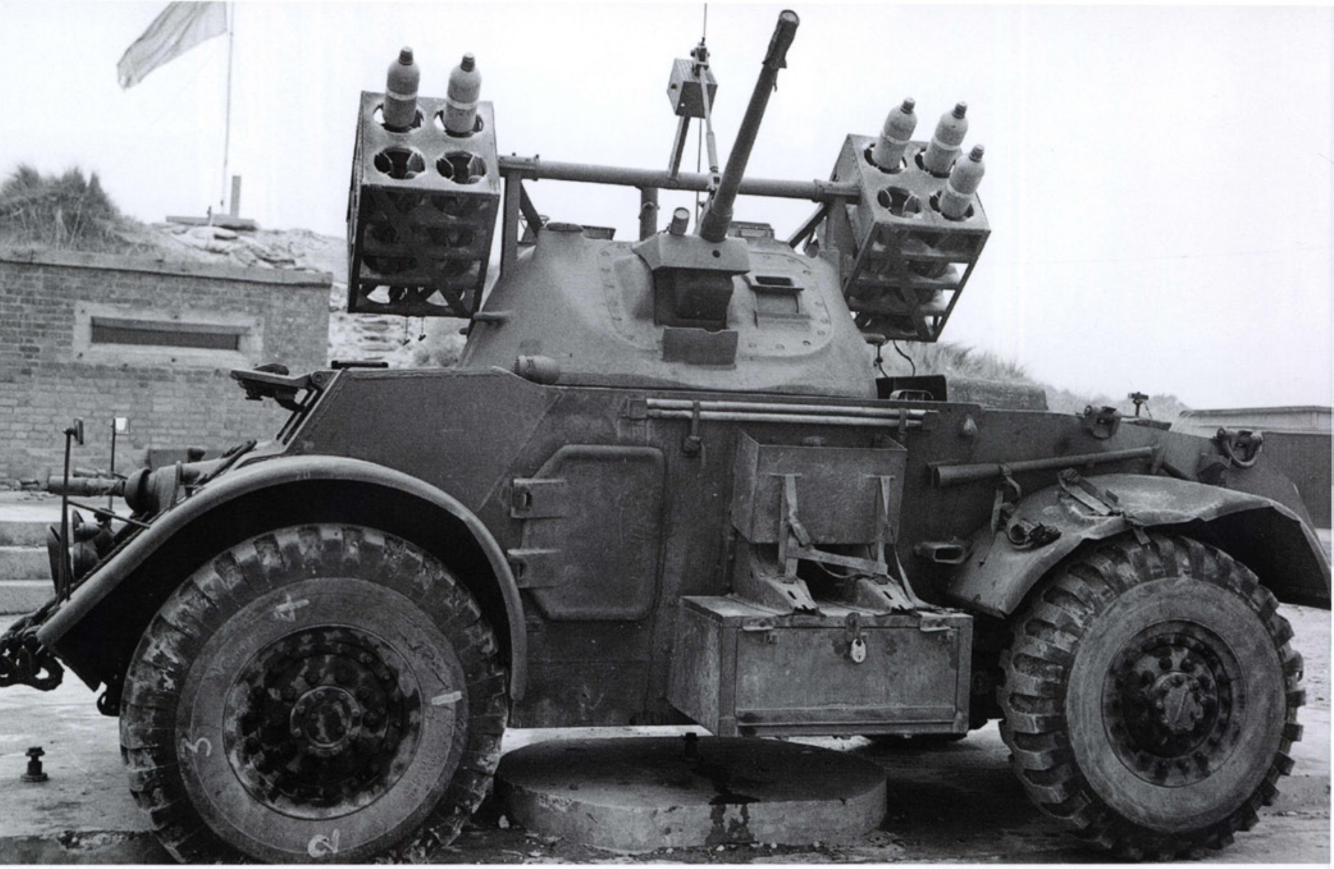
"Hercules", the command Staghound of LtCol H. A. Smith of the 2nd Household Cavalry, triumphantly moves through Brussels in September 1944, following the liberation of the city. This was the armored-car regiment of VIII Corps and operated Daimler 2-pdr armoured cars as well as a small number of Staghounds in command functions. A second command radio has been fitted in the hull and the antenna can be seen fitted to the periscope mount above the bow machine-gunner's station. (IWM BU 482A)



these hits tended to blow off wheels and suspension rather than penetrate the hull itself. During the advance beyond the Seine, the Staghounds spearheaded the race up along the coast, probing the Dunkirk defenses and later leading the Canadian columns into Ostend. By the first week of September the regiment had advanced some 400 miles. The remaining months of 1944 saw the regiment engaged in static warfare, holding the Bruges–Zeebrugge canal for most of October and then shifting into the Netherlands along the Maas and Waal rivers from November to February.

During this period, the regiment began a series of experiments to improve the firepower of its Staghounds. The most critical need was for more high-explosive firepower, given the puny high-explosive round of the 37mm gun and the delay in receiving enough 3in or 75mm Staghounds. The regiment attempted to acquire some surplus M7 105mm HMC self-propelled howitzers, but these were not part of war establishment and the request was turned down. The regiment was also aware of attempts to mount aircraft rockets on Sherman tank turrets, nicknamed "Tulips", and decided to try the same approach on the Staghound. Some launch rails and rockets were obtained from an RCAF Typhoon squadron and mounted on a Staghound turret with two launchers on either side. Test firings were conducted on November 26, followed by a demonstration to senior officers on December 2. The rockets were not especially accurate at long range, and at short range the fuze often failed to detonate the warhead. First Canadian Army recommended further study, but cancelled a February 1945 plan to convert enough to issue to serving

The command Staghound of MajGen G. L. Verny, commander of the 7th Armoured Division, enters Ghent, Belgium, during the liberation of the city in September 1944. Like many command Staghounds, this vehicle has additional radios with two added mounts fitted to the two front hull periscope openings. (IWM BU 769)



No 1 Canadian Base Workshop in Britain was assigned to fit 5in Land Mattress artillery rockets to the Staghound turret. The technicians added two four-round cells to either side of the turret. (NAC PA-166387)

units. Instead, Canadian Military Headquarters sponsored an effort in Britain by No 1 Canadian Base Workshop to adapt the Land Mattress artillery rockets to the Staghound turret. This placed four rockets in box launchers on either side of the turret. The main problem with this arrangement was that the backblast from the rockets was so severe that it damaged the rear mudguards. Another Canadian experiment was to mount four 20mm automatic anti-

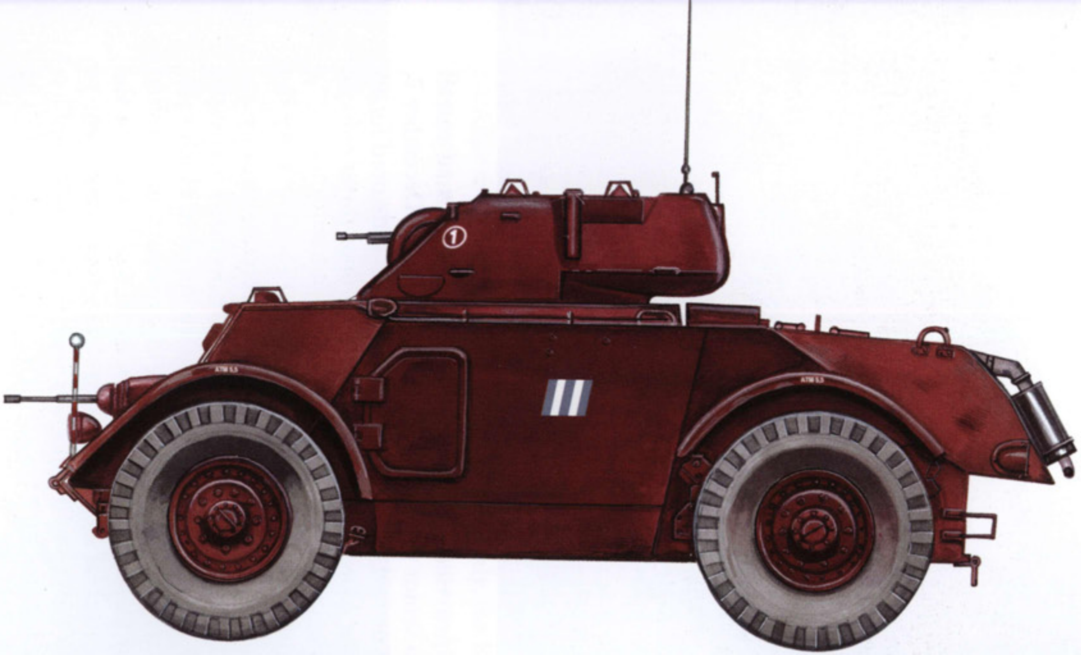
E

1: *AUTOBLINDO* STAGHOUND, *REPARTI CELERE* 3, ITALIAN STATE POLICE, TURIN, 1955

The Italian State Police (*Polizia di Stato*) received about 60 Staghound armored cars when the latter were retired from the Italian army, and these were issued to mobile and fast units (*reparti mobili* and *reparti celere*, respectively). Since the 37mm gun was hardly appropriate for the task, the armored cars were provided with a new mount for twin machine guns in the turret. They were painted in a distinctive maroon police color for visibility. The markings were quite elaborate, including the Italian national police eagle emblem in yellow on the glacis plate with the police license plate painted below, a unit insignia (3 Celere) on the right fender, and a vehicle number on the turret. The unit insignia on the hull side mimicked the army style, consisting of a pale blue rectangle (2nd Company) with two white stripes (2nd Platoon); this was repeated in simplified form on the left fender, with only the two stripes.

2: STAGHOUND MK I, 1ST AUSTRALIAN ARMOURED CAR SQUADRON, BRITISH COMMONWEALTH OCCUPATION FORCE, JAPAN, 1946

The Australian contingent of the BCOF included an armored-car squadron raised at Punkapunyal in 1946, which included 18 Staghounds. These were in the usual finish of dark khaki green and one of the few local adaptations was the addition of a stowage bin at the rear of the turret based on the Sentinel tank type. Markings were quite simple consisting of an arm-of-service square adjacent to the marking of the Australian BCOF which was based on the insignia of the 34th Infantry Brigade, which formed the core of the force; the BCOF insignia mainly consisted of a sunburst patterned on the Australian Commonwealth Forces cap-badge over a boomerang. The Australian army retained the US registration number, though repainted locally on the glacis, and there is a yellow/black bridging circle on the right fender.



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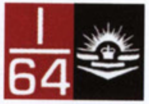

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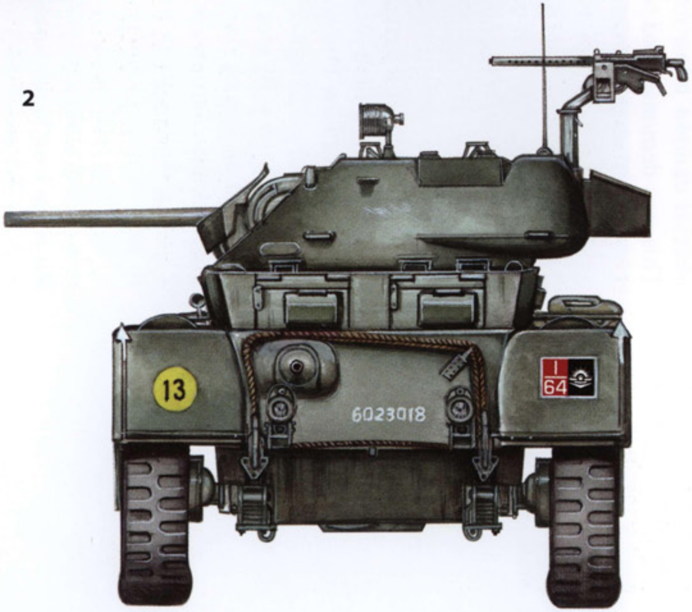
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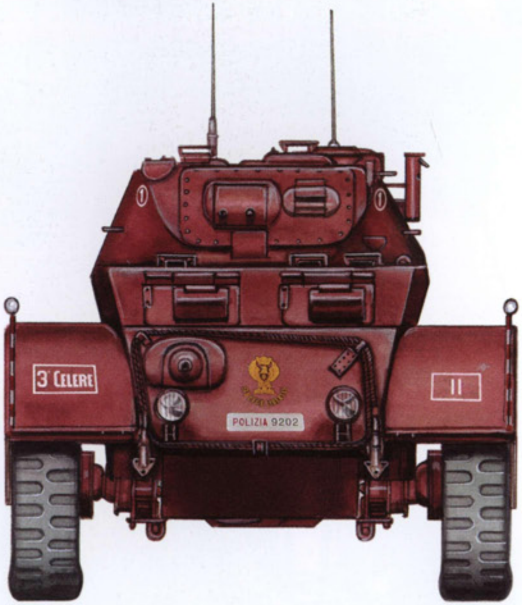
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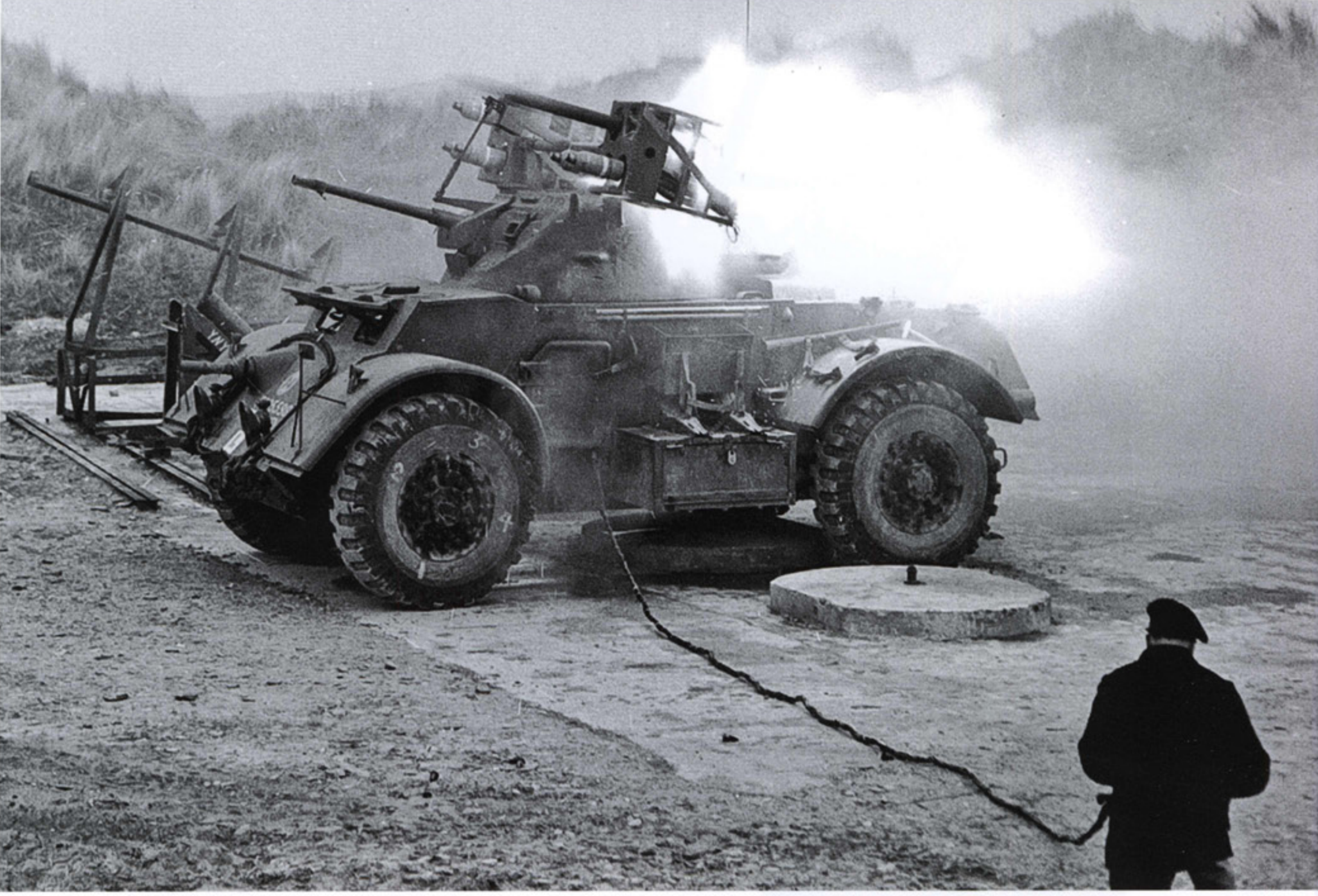


The Staghound Rocket Launcher was tested in Britain in 1945. The backblast proved a bit too much for the rear mudguards and so the configuration was never deployed. (NAC PA-166384).

aircraft cannon in an improvised open turret in place of the usual turret. This was demonstrated to senior officers in the Netherlands on December 2, 1944, but the scheme was turned down as by now there was little need for an air-defense vehicle in view of Allied air superiority, and the open turret reduced the value of the vehicle in reconnaissance missions.

After frustrating months of static warfare, in late February 1945 the XII Manitoba Dragoons was again assigned as corps reconnaissance for the advance of II Canadian Corps in its operations into Germany across the Rhine. The regiment had a hard slog in the mud of the forested Hochwald, which severely restricted mobility. In early April, I Canadian Corps shifted from Italy to North-West Europe, bringing with it the Staghounds of the Royal Canadian Dragoons and expanding the Canadian contingent in Montgomery's 21st Army Group to a full army with two corps – the First Canadian Army. By war's end the XII Manitoba Dragoons had about half its Staghounds lost or damaged, with 21 written off and eight damaged but put back into action. As mentioned earlier, three of the Staghound IIIs with 75mm guns belatedly arrived in April 1945, in time for the final fighting in Germany.

By the end of the campaign in Europe the two Canadian regiments constituted almost half of the Staghound combat strength in 21st Army Group; the remaining Staghounds were scattered among British armored-car regiments and sundry command and headquarters troops. Staghounds also served in small numbers in the Polish 1st Armoured Division and the Belgian *Brigade Piron*. The Staghound was the second most common armored car with Montgomery's forces, with around 250 in service at war's end compared to about 350 Daimler 2-pdr armored cars. One of the more obscure Staghound operators was the Royal Navy's 30 Assault Unit – a multi-service unit promoted by the creator of "James Bond", Ian Fleming, who served in naval intelligence during the war. This unit deployed field teams with specially equipped Jeeps, tasked with conducting deep-reconnaissance missions to collect technical intelligence. To reinforce these teams and provide fire support, a small number of Staghound and Humber armored cars were used.

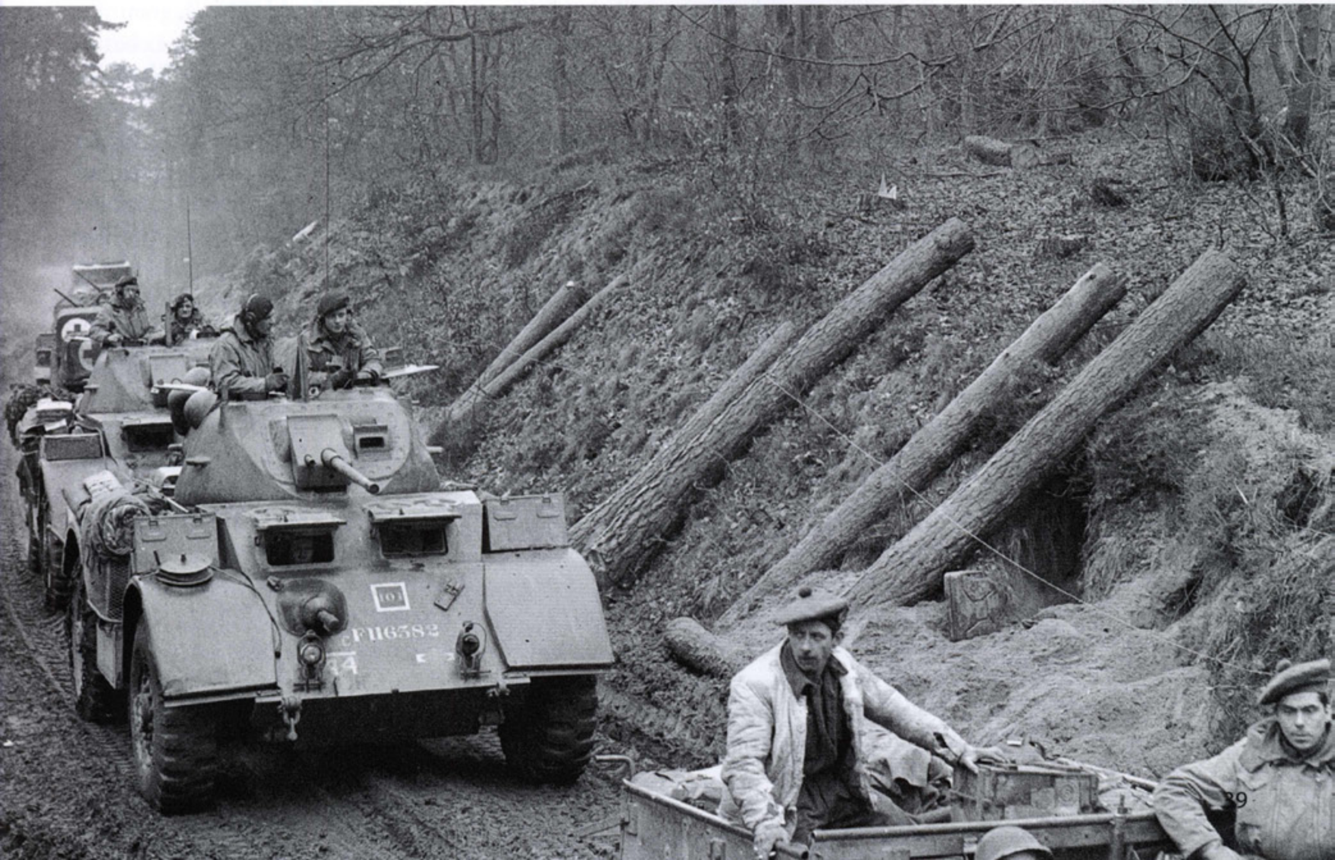
The Canadians' employment of the Staghound in North-West Europe highlighted the tactical limitations of armored car regiments against a determined opponent in constricted terrain. While such regiments could prove enormously useful in a cavalry role, exploiting a breakout as occurred in the Falaise fighting in August 1944, in the more typical close-combat conditions the limited armored protection provided by armored cars significantly restricted their utility compared to better-armored tanks. This shortcoming was not peculiar to the Staghound regiments, but was suffered by other armored-car regiments in Europe as well. Although designed with desert warfare in mind, the Staghound saw nearly all its employment in continental Europe, where battlefield circumstances did not permit the type of mobility envisioned for such a vehicle.

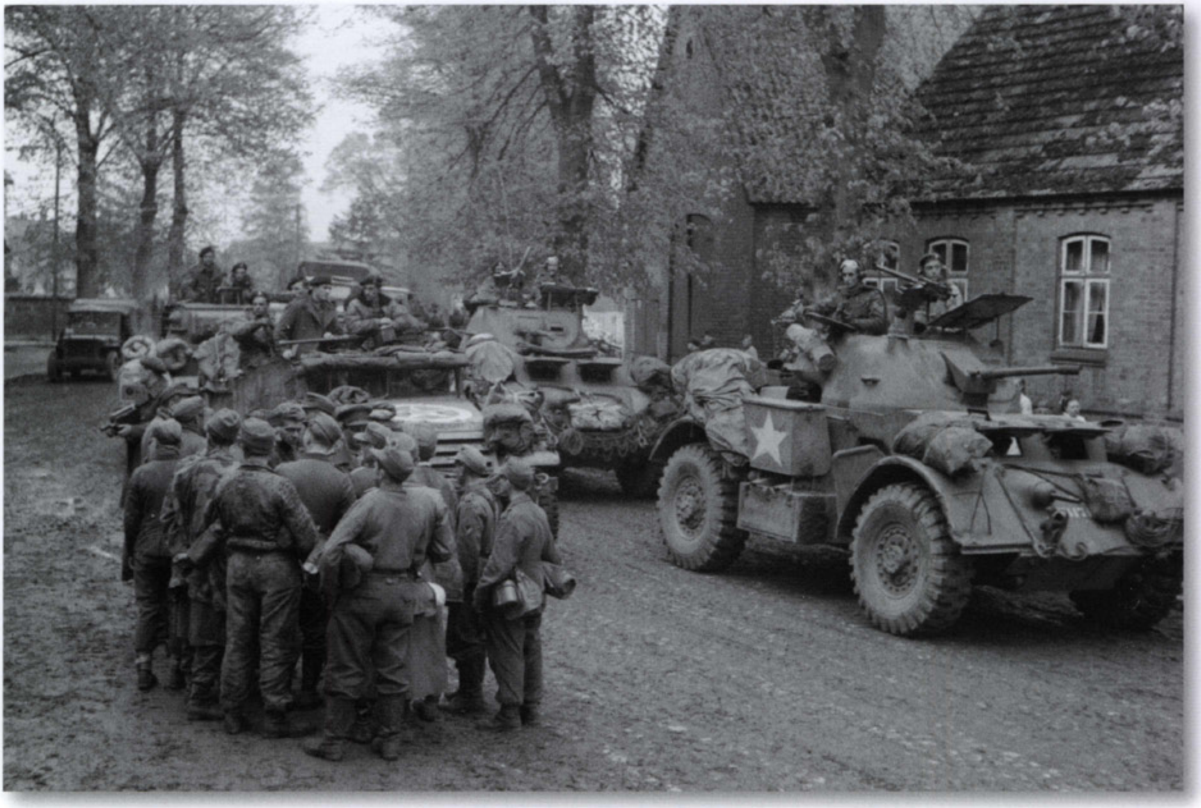
Post-war service

Staghounds were extensively used in the years immediately after the war for occupation and police duties. On the one hand, they were big and imposing enough to intimidate crowds. On the other hand, they were easy to maintain, light enough for most bridges and roads, and did not tear up roads like tanks did.

After re-equipping with Staghounds in Italy, the British 4th Reconnaissance Regiment was dispatched to Greece in January 1945; the 23rd Armoured

A Staghound column of 10 Troop, B Squadron, XII Manitoba Dragoons, supporting II Canadian Corps in the Hochwald near Sonsbeck, Germany, in March 1945, preceded by a Universal Carrier. (NAC Jack Smith PA 144149)





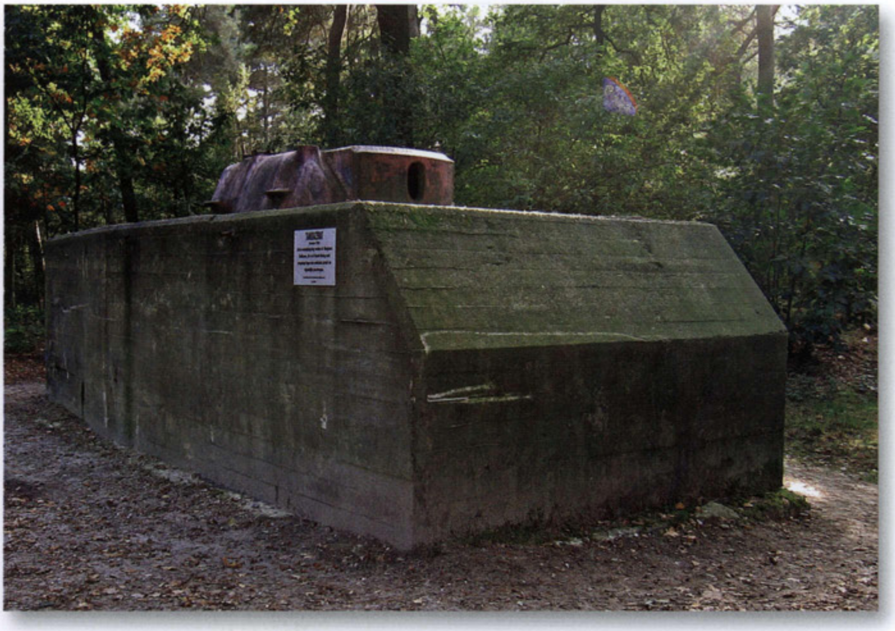
A column of heavily stowed British Staghounds passes a column of German prisoners in Gudow, Germany, on May 2, 1945. (IWM BU 5035)

Brigade was also deployed to Greece with Staghounds, where they saw some action in the ensuing civil war. The 1st King's Dragoon Guards in Egypt was re-equipped with Staghounds in the final months of World War II, then was sent to perform peacekeeping duties in the French protectorates of Lebanon and Syria. A number of Staghounds served in Palestine during the troubles there in 1946–48.

One of the more remote destinations for the Staghound was Japan, by way of Australia. The Australian army began acquiring Staghounds in August 1943, receiving a total of 279 by 1944. They saw no combat service during the war in Australian service, but in 1946 the 1st Armoured Car Squadron was dispatched to Japan to serve with the British Commonwealth Occupation Force. The Staghound proved a bit big for the narrow Japanese roads, and the squadron returned to Australia in December 1948. The Australian Staghounds were largely retired from service in the 1950s, although 36 remained in inventory as late as 1970.

STAGHOUND STRENGTH IN NORTH-WEST EUROPE, 1944–45

	Staghound Mk I	Staghound Mk II (3in)	Staghound Mk III (75mm)	Staghound AA	Staghound Command	Total
30 Dec 44	163			14	9	186
27 Jan 45	280			146		426
5 May 45	409	5	27	143		584
30 Jun 45	393	11	75	348		827



The Netherlands army recycled its Staghounds after they were retired by stripping the hulls and turrets and embedding them in concrete bunkers for airbase defense. As can be seen, the usual gun mantlet was replaced with a fixed armored machine-gun embrasure. These were usually buried up to the bunker roof but this exposed example is on display at the Marshall Museum in Overloon. (Author)

The British army gradually retired the Staghound from service in the late 1940s. A small number were cascaded down to allied armies in Europe. Denmark ended up with eight of the rare Staghound III 75mm armored cars in 1946, but these were retired in 1953.

The Netherlands received 108 Staghound armored cars, which remained in service for significantly longer. After being retired from normal service in the 1950s and 1960s, these Staghounds were recycled for airfield defense. The hulls and turrets were stripped and a machine-gun substituted for the 37mm gun. The hulls were then buried in reinforced concrete to create pillboxes to defend the perimeters of key airbases.

Greece inherited a small number of Staghounds from British units that had served there in the 1940s.

Probably the largest single new Staghound operator was Italy, which received more than 100 Staghounds starting in 1945, during the reconstruction of the Italian army and the Carabinieri. When Somalia became a United Nations trust territory under Italian administration in 1950, the Italian army dispatched a number of armored-car units for patrol duty with the Security Corps. Staghounds served with the *Squadrone di Cavalleria Blindata della Somalia* through the mid-1950s. When the Staghounds were finally withdrawn from army use, about 60 were turned over to the Italian *Polizia di Stato* (State Police) for use in special mobile units and specialized tasks such as airport security. Most of the police Staghounds were rebuilt for this function by removing their 37mm gun and substituting a Breda Mod 35 machine-gun in the turret. These served with the Italian police through the early 1970s.

Switzerland purchased 64 Staghounds from Britain in the 1950s. Some of those in Swiss army service were re-armed with 20mm guns. Five of these Staghounds were turned over to the local K+W ordnance firm to examine more extensive rearmament packages including 47mm and 90mm gun upgrades, but these projects did not proceed beyond trials.

Besides Staghound transfers to European allies, during the late 1940s and early 1950s Britain exported surplus Staghounds to the Middle East.

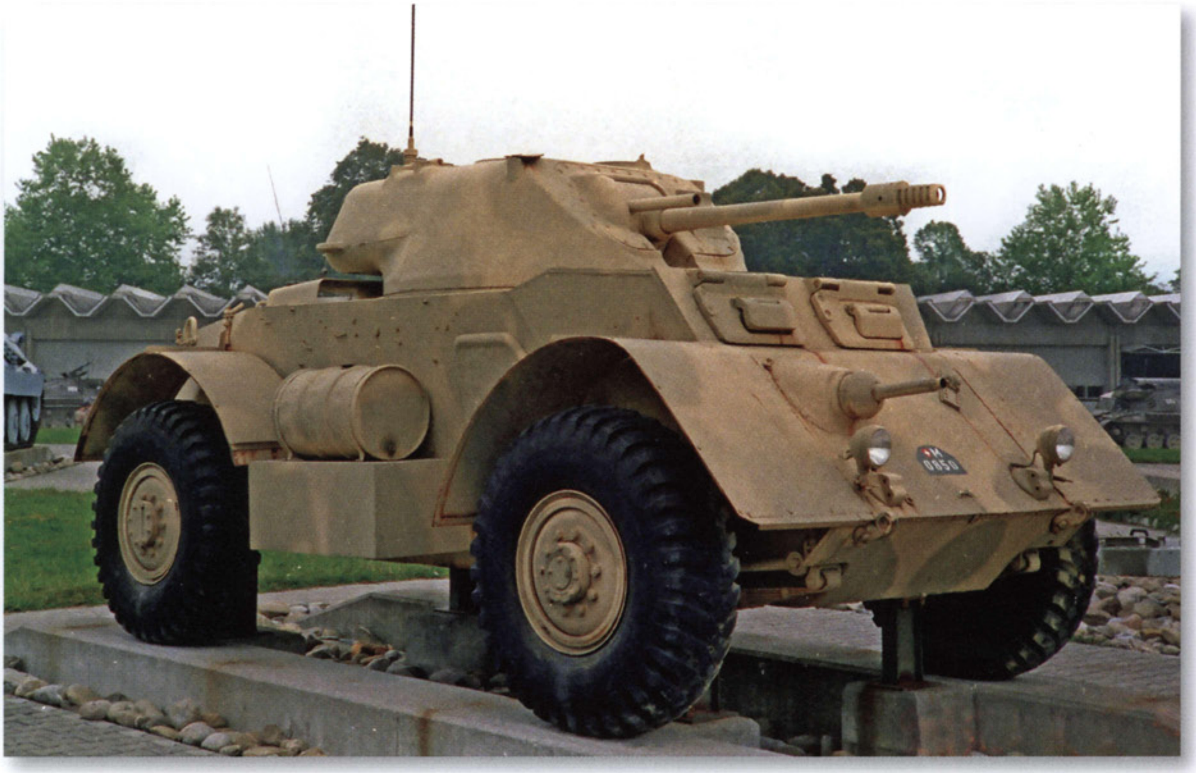
Italy used the Staghound in the 1950s in the army's cavalry units as well as in Carabinieri mobile units. (NARA)

This included supplies to Egypt (50), Syria (52), Sudan, Saudi Arabia, and Transjordan. The Staghound III had not proved a particularly good solution to the firepower problem, and after World War II another alternative version was constructed in a bid to make the Staghound more attractive in the export market. Turrets from the AEC Mk III armored car were substituted for the normal Staghound turret; 16 were built for Lebanon in 1955. A total of 56 Staghounds of various types served with the Lebanese army, but were later used by the police. The availability of demilitarized Staghounds for the export market led to some other odd armament choices; for example, some Staghounds sold to Lebanon and Syria were armed with surplus 2-pdrs. The Lebanese Staghounds eventually fell into the hands of militias during the civil wars in the 1980s and remained in service until recently. Sudan acquired a few Staghounds with an even more unusual conversion, consisting of a an AEC Mk III turret modified to accommodate the M34 gun mount and 75mm gun from the Sherman tank. There were a number of other attempts to modify the armament.

Israel attempted to acquire armored cars after the 1948 war, and the Staghound was the preferred type for the planned reconnaissance battalions. Some demilitarized Staghounds were located in Britain and attempts were made to purchase 50, but there were a variety of political obstacles to this purchase. After relations with the UK improved, Israel was offered 112 demilitarized Staghounds without guns or radios. These were delivered between December 1951 and early 1953. The main problem was locating suitable 37mm guns, of which there were only nine as late as 1955. A batch of 100 such guns was finally purchased later in 1955, but at the same time Israel had begun to acquire the French AMX-13 light tank for its reconnaissance units. The AMX-13 had better firepower than the Staghound and only required a three-man crew. As a result, the requirement for 108 Staghounds for the 181st, 182nd and 183rd Reconnaissance Battalions was dropped to only 36 Staghounds. At the time of the October 1956 war, about 15 Staghounds were operational with the 181st and 182nd Reconnaissance Battalions, but since these were attached to the Northern and Central Military Districts they did not take part in the Sinai fighting.

Israel purchased more than 100 Staghounds from Britain in 1951, but delays in obtaining sufficient 37mm guns delayed their introduction into service until 1954. These, the first Staghounds in Israeli service, are paraded in Tel Aviv in May 1954. They served in two reconnaissance battalions at the time of the 1956 war, but did not see combat use in the Sinai. (IGPO)

The subsequent fate of the erstwhile Israeli Staghounds was rather curious. No longer needing these vehicles, the Israeli government offered them on the international market via an American arms dealer named Irving Davidson. In 1957, Israel approved the sale of 68 of these to Anastasio Somoza's regime in Nicaragua because Somoza had been willing to sell Israel rifles during the embargo in 1948. There was a certain amount of skullduggery involved in the deal. Davidson also had contacts with Fulgencio Batista's regime in Cuba, which was then deeply embroiled in civil war but hamstrung by an American arms embargo. Davidson engineered a deal between Somoza and Batista to divert 28 of the new Staghounds to Cuba in February 1958. It is worth noting that Cuba found some other rather odd sources of armored vehicles at the time, including a handful of German PzKpfw IV tanks sold by Spain to Czechoslovakia, rebuilt and sold to Syria in the early 1950s, and resold again to Havana. In the event, the Staghounds took a very active role in the fighting between Batista's army and Fidel Castro's rebel forces, as the Cuban army's Sherman tanks were in poor repair while the Staghounds had been recently reconditioned and were dependable. They were popularly dubbed *las tanquetas* – "the little tanks". Some fell into Castro's hands and served for a time after the war in the Cuban Revolutionary Armed Forces.



The Swiss army used the Staghound in the 1950s and some were re-armed with the 4.7cm *Panzerabwehrkanone* 41, as seen on this example preserved at the Thun tank base in the 1980s. (Author)

The remaining Nicaraguan Staghounds served in the country's National Guard for many years, primarily with the 1o *Batallón Blindado*. When 37mm ammunition became scarce in the late 1960s, some Nicaraguan Staghounds were modified by removing the turrets and substituting a pintle-mounted .50cal heavy machine-gun. The Staghounds were extensively used in the ensuing civil war with the Sandinistas, and about 20 were still operational when Somoza fled the country in 1979. They remained in Sandinista service during the ensuing war with the US-backed Contra rebels in the 1980s, although they were gradually replaced by Soviet-built armored equipment starting in 1981. Staghounds also served in small numbers in Honduras starting in 1951; these may have originated in the handful of vehicles left in the US for testing.

F

1: STAGHOUND ARMORED CAR, CUBAN ARMY, 1959

The Cuban army received some Staghounds from the US under the Military Assistance Program, and supplemented them with ex-Egyptian/ex-Israeli Staghounds in the mid-1950s after US aid was cut off. About 30 were still in service with the army in the late 1950s during fighting with Castro's rebel forces. This particular example was captured by the rebels in 1959. It is marked with the usual national insignia on the turret and glacis plate, as well as the army serial number on the hull side.

2: STAGHOUND/AEC MK III, AL-MOURABITOUN MILITIA, LEBANON, 1975

The Lebanese Ministry of Interior obtained Staghounds after World War II which had been re-equipped with AEC Mk III turrets. A number of these were taken over by the Al-Mourabitoun militia during the civil war in the mid-1970s. The original light grey color of the Ministry of Interior was overpainted in a sand tan color and the militia name painted on the turret side and glacis plate. This militia, a Sunni force with an Arab Nasserite/leftist orientation and led by Ibrahim Quleilat, sided with Yassir Arafat's Palestinian Liberation Organization until wiped out by Walid Jumblatt's Druze militia during the civil war.

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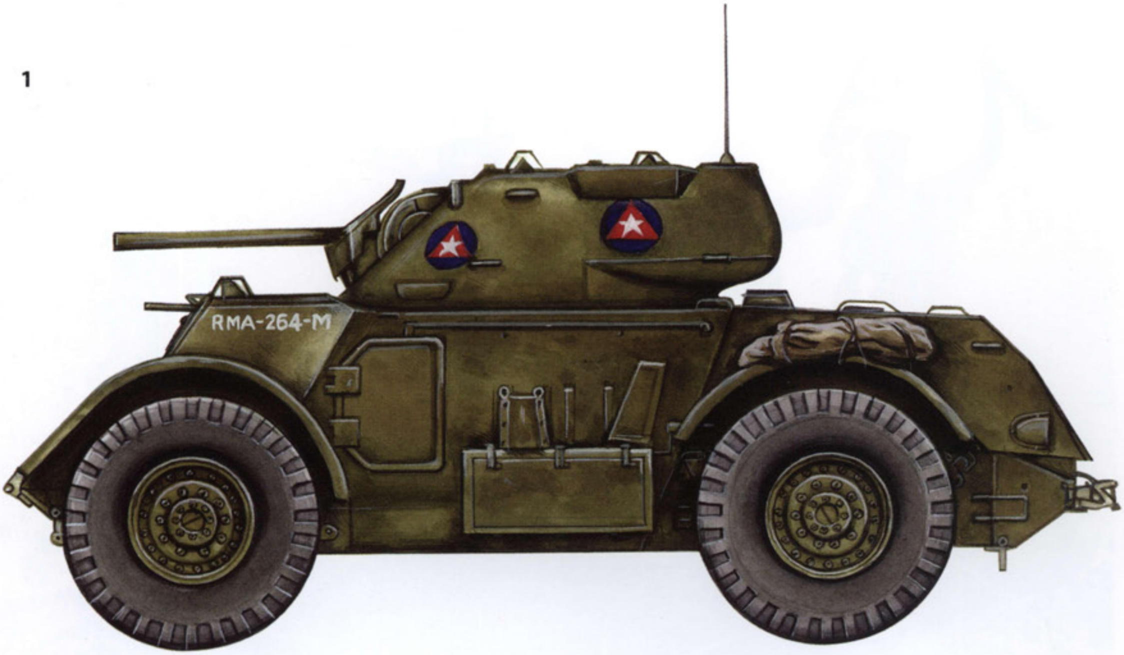

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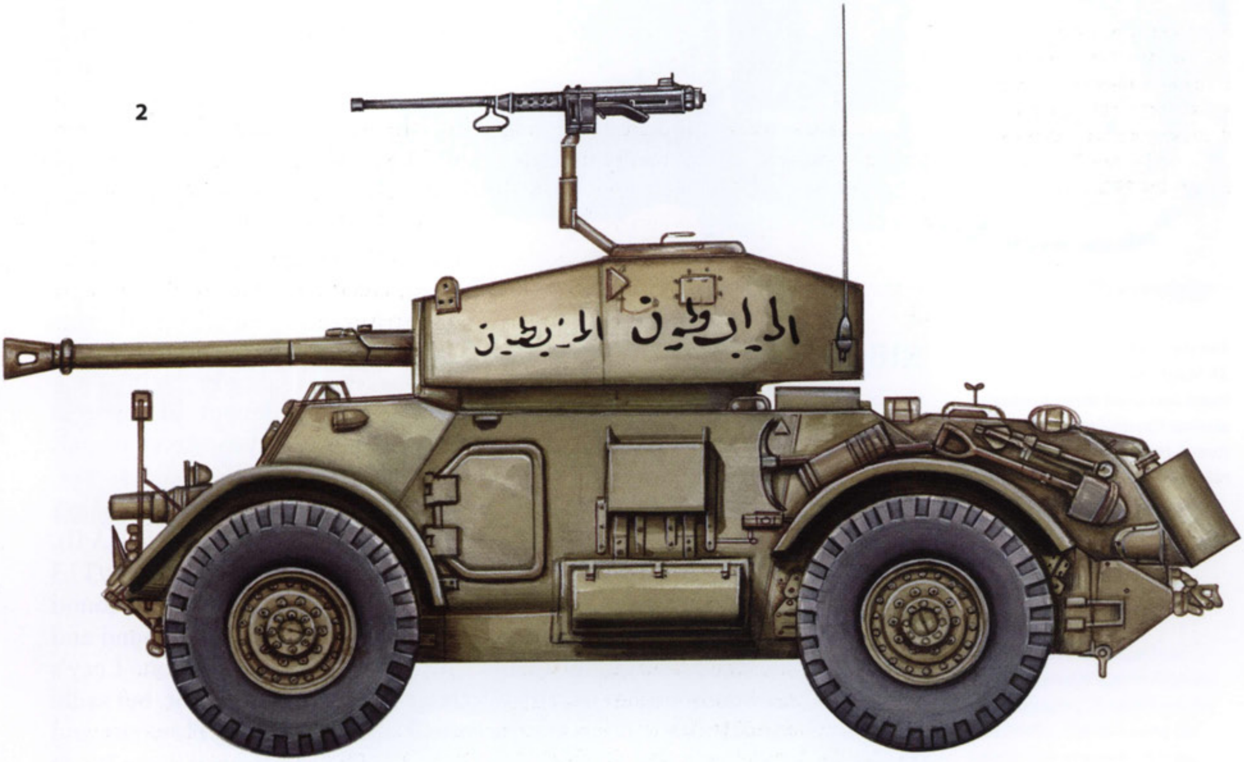

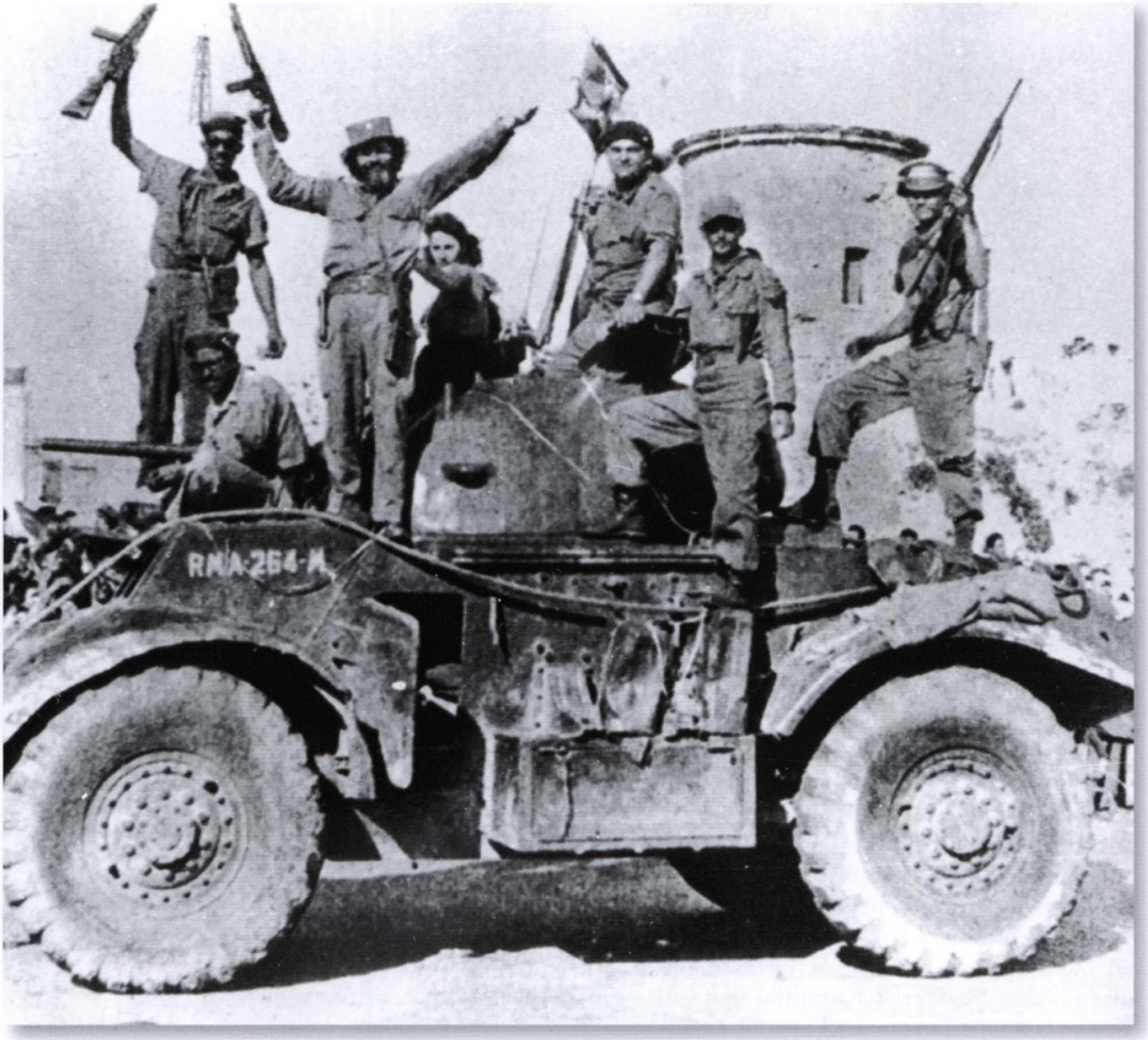

Batista's Cuban army acquired 28 Staghounds indirectly from Israel and used these *tanquetas* against Castro's insurgent forces. Here, one has fallen into rebel hands. (Patton Museum)

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There are short histories of the Staghound's development in the two unpublished US Ordnance Department histories of armored-car development, and most of this information is included in the excellent Hunnicutt survey. Chevrolet also prepared a short history, which can be found in the Ordnance records at the US National Archives and Records Administration (NARA II). Ordnance also prepared a very extensive report on the Trackless Tank/T13 controversy for the Mead Committee of the US Senate, which can be found in the Ordnance files at NARA; this has some bearing on the Staghound and also includes some intriguing details on the Palmer Commission. Lucy's account of the Staghound in Canadian service is short but excellent, but sadly there is no comparable volume on the British side of the story. Plowman and Thomas's book on New Zealand armor in World War II provides a lot of detail on the Staghound. The Polish perspective is provided in Magnuski's excellent survey. There are two good histories of Staghound regiments – on the XII Manitoba Dragoons and the New Zealand Divisional Cavalry.

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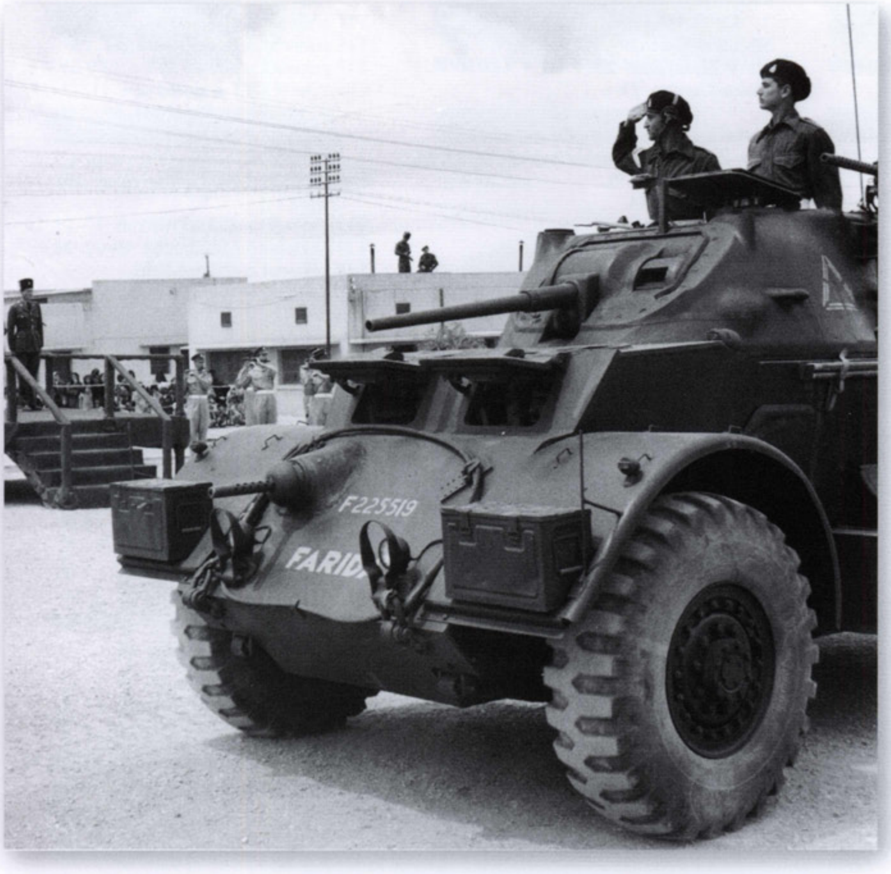

A Staghound armored car of the Transjordanian Frontier Force passing in review in the late 1940s. The armored car uses a triangle tactical sign, as was British practice, and a vehicle name "Farida" is painted on the glacis. (IWM E31872)

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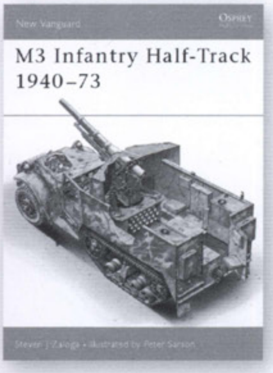
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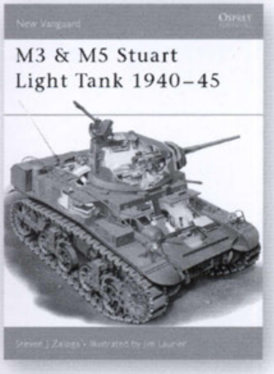
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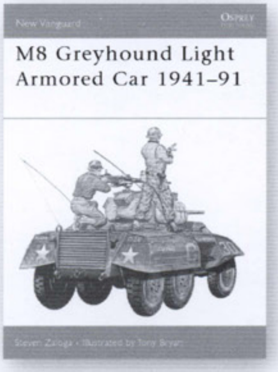
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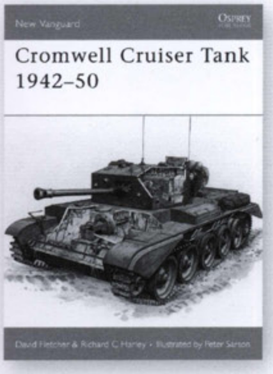
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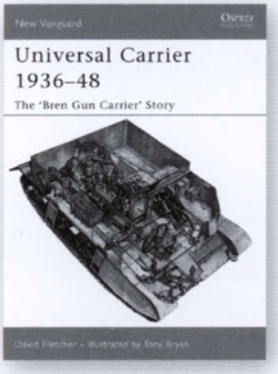
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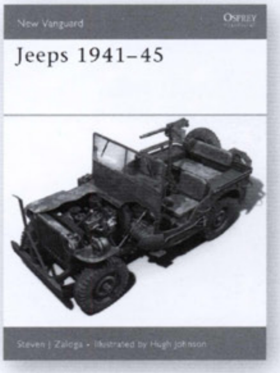
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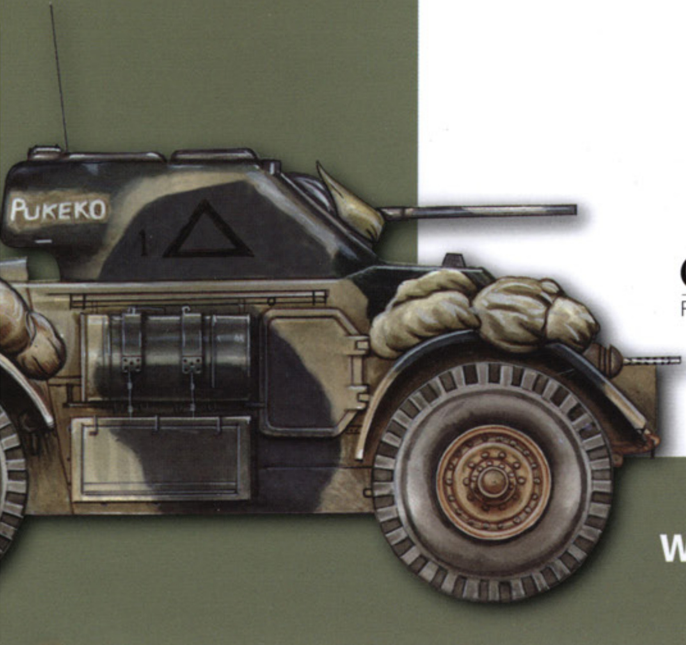

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